



CITY AND COUNTY OF NEWCASTLE UPON TYNE.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

ON THE

Sanitary Condition of the City

DURING THE YEAR

1930.

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Members of Council who served on the

HEALTH COMMITTEE.

Councillor R. W. SIMPSON, M.B., Ch.B., Chairman.

The Lord Mayor (Alderman DAVID ADAMS, J.P.), Vice-Chairman.

Alderman J. J. FORSTER, J.P.

„ WALTER LEE, J.P.

„ J. CHAPMAN, J.P.

Councillor WALTER THOMPSON.

Councillor A. LOUVRE.

„ CATHERINE A. AULD, J.P.

„ J. PEARSON.

„ W. C. PERCIVAL, J.P.

„ MAY NEWTON.

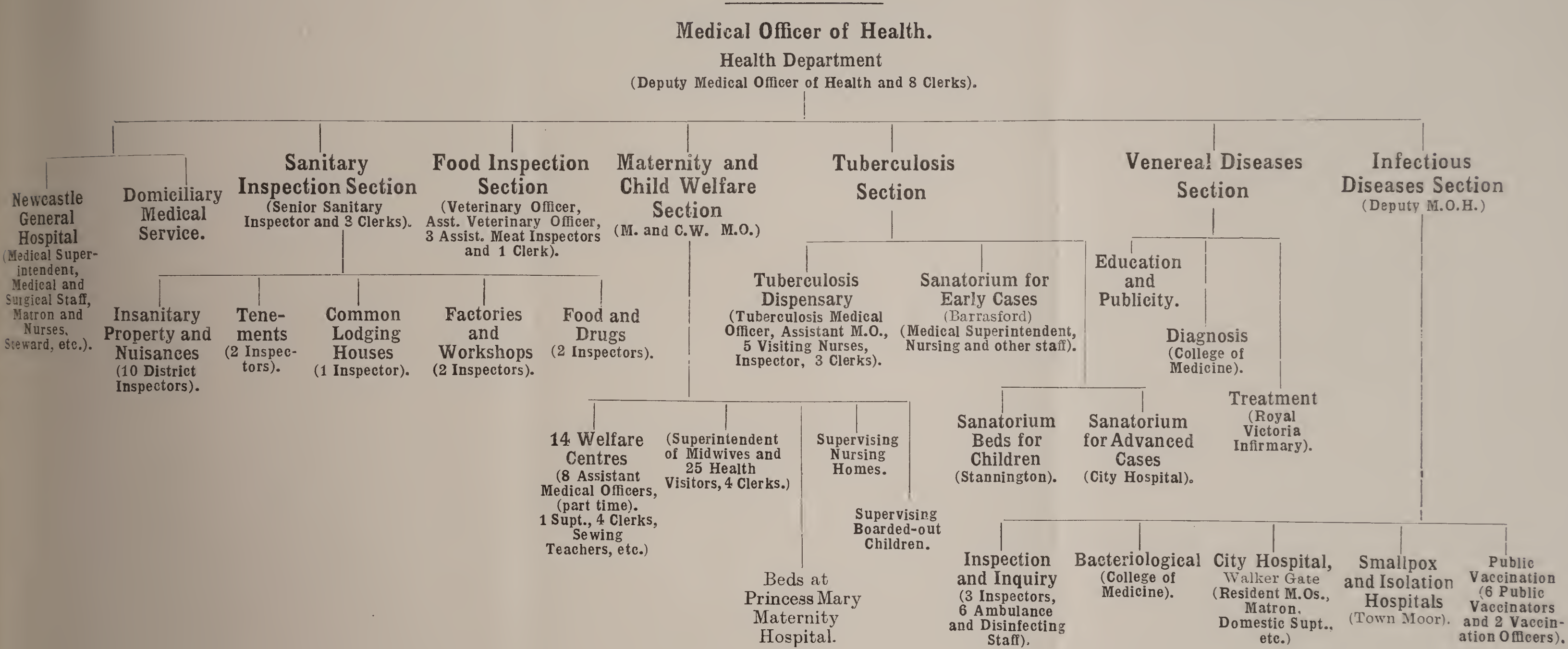
„ JOHN BARKER, J.P.


„ J. E. SCANLAN, J.P.

„ H. MOAT, Junr.

„ J. LEADBITTER, J.P.

Table showing the various Sections of the Health Committee's work which is under the direct charge of the Medical Officer of Health.





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MATERNITY AND CHILD WELFARE COMMITTEE.

Alderman JOHN CHAPMAN, J.P., Chairman.

Councillor CATHERINE A. AULD, J.P., Vice-Chairman.

The Lord Mayor (Alderman DAVID ADAMS, J.P.).

Councillor R.W. SIMPSON, M.B., Ch.B. †Dr. R. P. R. LYLE.

„ WALTER THOMPSON. †Miss G. ROWELL.

„ JEANIE L. GIBBIN, J.P. †Mrs. E. M. WILLIAMSON.

„ J. E. SCANLAN, J.P. *Councillor H. MOAT, Junr.

„ MAY NEWTON. ‡ „ CATH. A. LOCKE.

‡ „ FRANCES E. TAYLOR.

* Member of the Health Committee.

† Co-opted member.

‡ Appointed by City Council.

STAFF.

HAROLD KERR, O.B.E., M.A., M.D., Ch.B., D.P.H., Medical Officer of Health and Medical Superintendent of the City Hospitals for Infectious Diseases.

J. A. CHARLES, M.D., B.S., M.R.C.P., D.P.H., Deputy Medical Officer of Health.
CHRISTOPHER RAIMES, Senior Sanitary Inspector.

JAS. McNICHOL, Chief Assistant Inspector and Assistant Workshops Inspector.

ISAAC CLARK, Assistant Workshops Inspector.

JAS. HUNTER and **A. KIRSOP**, Assistant Inspectors under the Food and Drugs Acts.

W. F. BACON, **JAS. McKENDRY**, **L. W. JOHNSON**, **THOS. HESLOP**, **WM. GRAY**, **WM. E. PERKINS**, **J. BROWN**, **W. STEWART**, **M. SWALES**, **E. G. WINGATE**, District Inspectors.

F. GALTON, **L. WADE**, Tenement Inspectors.

ADAM FLOCKHART, Assistant Inspector of Common Lodging Houses.

WM. BEAN, **D. WOOD** (resigned June), **J. H. MACADAM**, **B. BELL** (appointed June, resigned September), **W. A. PILSON** (appointed September), Infectious Diseases Inspectors.

JAS. ROBSON, **JAS. BRUCE**, **JNO. R. CRAGIE**, **J. W. ROBSON**, **THOS. MOORE**, **J. ROBSON, jun.**, Ambulance Drivers and Disinfectors.

WM. MILNE, ***GEO. CUTHBERTSON**, ***ALFRED HEDLEY**, M.S.M., ***ALEC. M. WALKER**, **JOS. GILHESPY**, **H. G. OLIVER**, ***ROBT. LAWSON**, ***D. MACPHERSON**, ***R. DOBBIN**, **H. G. COATES**, **F. PELLATT**, **IVY GOODHALL** (Typist), Clerks in the Health Department.

Those marked * hold the Certificate of the Royal Sanitary Institute.

THOS. PARKER, F.R.C.V.S., Veterinary Officer and Inspector of Provisions.

H. THORNTON, M.R.C.V.S., B.V.Sc., D.V.H., Assistant Veterinary Inspector.

JAS. M. ANDERSON, **W. COCKBURN**, **GEO. PHILLIPS**, Assistant Inspectors of Provisions. ***NORMAN DICKSON**, Clerk.

A. F. G. SPINKS, M.D., Maternity and Child Welfare Medical Officer.

a **GEORGINA B. CAMERON***, Chief Health Visitor and Supt. of Midwives.

f **CATHERINE M. THEXTON†**, **b** **MARION MOODY***, **c** **LIZZIE ISA PRITCHARD**, **c** **LOUISE SHELL**, **d** **FLORENCE MARTHA HATFIELD***, **d** **HILDA MORTON***, **d** **NORAH B. WILLSON***, **b** **E. HISCO***, **b** **E. JOHNSON***, **b** **N. E. CARR***, **b** **T. MASON***, **b** **E. M. HASTIE***, **b** **C. R. WORRALL***, **b** **J. POTTINGER***, (resigned August), **b** **N. LEWIS**, **b** **M. A. SIMPSON***, **b** **M. L. NICHOLSON***, **b** **N. THOMPSON** (appointed April), **g** **C. N. PHILLIPS** (appointed July), **d** **M. TAYLOR** (appointed September), Health Visitors. **EDITH ROGERS**, **AMY RODGERS**, **MARION S. BATT**, **A. FENWICK**, Clerks.

(Qualifications of those marked **a** C.M.B., General and Fever Nursing and R.S.I. Certificates. **b** C.M.B., General Nursing and R.S.I. **c** C.M.B. and R.S.I. **d** C.M.B. and General Nursing. **f** C.M.B., Fever Nursing and R.S.I. **g** C.M.B.).

* State Registered Nurse.

† State Registered Fever Nurse.

ANNIE G. BAINBRIDGE, Superintendent of Welfare Centres.

GLADYS PATTISON, **I. GAWMAN**, **C. BARNES**, **M. E. MUSE**, Clerks.

H. GLEN DAVISON, M.D.

L. MABEL R. CAMPBELL, M.B., Ch.B.

H. HARVEY EVERS, M.B., F.R.C.S.

F. J. NATTRASS, M.D., B.S., M.R.C.P.

OLGA ADAMS, M.B., B.S.

ISABELLA LANE, M.B., Ch.B.

GERTRUDE H. G. HICKLING, M.D. Ch.B.,
B.Sc., D.P.H.

C. N. ARMSTRONG, M.B., B.S., M.R.C.P.,
B.Hy., D.P.Hy.

A. G. OGILVIE, M.B. B.S., M.R.C.P.

Assistant Medical Officers (part time) Welfare Centres.

- G. HURRELL**, M.D., B.S., B.Hy., D.P.H., Tuberculosis Medical Officer.
E. F. DAWSON-WALKER, Assistant Tuberculosis Medical Officer (appointed August).
T. L. J. COXON, M.B., B.S., B.Hy., D.P.H., Assistant Tuberculosis Medical Officer (resigned May).
WM. H. DICKINSON, O.B.E., M.D., Ch.B., M.R.C.P.(Ed.), D.P.H., Tuberculosis Medical Officer (part time).
c **CONSTANCE M. BAYNE**, **d** **ANNIE BOOTH**, **a** **W. E. DALE***, **b** **J. P. KENMIR***,
e **M. YOUNG**, Tuberculosis Visiting Nurses.
- (Qualifications of those marked **a** General Nursing. **b** General Nursing, C.M.B. and R.S.I.
c General Nursing and Health Visitors and School Nurses Certificates of R.S.I. **d** Fever Nursing. **e** Fever Nursing and C.M.B.
 * State Registered Nurse.
- A. FRENCH**, Assistant Inspector.
GEO. MAGNAY, **PAMELA E. THORATT**, **GERTRUDE GILLENDER**, Clerks.

BARRASFORD SANATORIUM.

- C. G. R. GOODWIN**, M.R.C.S., L.R.C.P., Medical Superintendent.
FRANCES BAGULEY, A.R.R.C., Matron. Sister, Nurses, Servants.

CITY HOSPITAL FOR INFECTIOUS DISEASES.

- E. PORTEUS**, M.B., B.S., D.P.H., Resident Medical Assistant.
B. A. DORMER, M.B., B.S., Resident Medical Assistant (appointed November).
W. FRANK WILSON, M.B., B.S., Consulting Oto-Rhinologist.
J. L. WATT, Matron.
A. M. STEEDE, Domestic Superintendent.
JESSIE LAING, Assistant Matron. Sisters, Nurses, Clerks, Domestic Staff.
M. BURRILL, Dispenser.
GEO. COCKBURN, Engineer.
J. SAUNDERSON, Assistant Engineer.
HERBERT BLACKTIN, **FRANK HARRINGTON**, Lodge Keepers, City Hospital for Infectious Diseases. Firemen, Porters, Gardeners, Joiner and Handyman.

SMALLPOX AND ISOLATION HOSPITALS.

- JOS. W.** and **JANE STEPHENSON**, **MATTHEW** and **ISABELLA ROBSON**, Care-takers.

NEWCASTLE GENERAL HOSPITAL.

- G. P. HARLAN**, M.D., M.B., Ch.B., D.P.H., Medical Superintendent.
G. F. DUGGAN, M.B., B.Ch., B.A.O., F.R.C.S., Deputy Medical Superintendent.
E. M. MOSELEY, M.B., B.S., Resident Medical Officer (resigned December).
H. C. BECK, M.B., B.S., Resident Medical Officer.
SARAH B. ALLAN, M.B., B.S., Resident Medical Officer (resigned September).
THELMA MOUAT, M.B., B.S., Resident Medical Officer (resigned December).
GLADYS L. NEILL, Resident House Physician (appointed December).
A. BARON, Matron.
S. LAKE and **M. C. TAYLOR**, Assistant Matrons. Sisters, Nurses, Domestic Staff.
N. M. SHELSTON, Dispenser.
JAMES MATTHEWS, Steward. Ambulance Drivers, Porters, Male Nurses, Clerks.

CONSULTING STAFF.

THOMAS BEATTIE, M.D., B.S., F.R.C.P., Medical Director (appointed October).
 JOHN CLAY, M.B., B.S., F.R.C.S., Surgical Director (appointed October).
 S. W. DAVIDSON, M.D., B.S., M.R.C.P., Radiologist (appointed July).
 J. C. STEWART, M.S., F.R.C.S., Consultant Surgeon.
 W. H. DICKINSON, O.B.E., M.D., Ch.B., M.R.C.P.(Ed.), D.P.H., Consultant Physician.
 W. E. WARDILL, M.B., B.S., F.R.C.S., Deputy Surgeon.
 A. MACRAE, M.A., M.D., Ch.B., D.O.M.S., Consultant, Diseases of the Eye.
 D. R. MCGREGOR, B.Sc., M.B., Ch.B., D.L.O., R.C.P.S., Consultant. Throat, Nose and Ear.

DISTRICT MEDICAL OFFICERS

DR. R. L. BELL, DR. J. MACRAE, DR. G. D. NEWTON, DR. FRANK HAWTHORN,
 DR. E. H. MOSELEY (resigned 2nd December, 1930), DR. E. P. TULLOH
 (appointed 3rd December, 1930), DR. W. SIMPSON, DR. R. W. NEVIN,
 DR. W. T. HALL, DR. T. J. RYAN.

PUBLIC VACCINATORS AND VACCINATION OFFICERS.

DENE, HEATON and BYKER—DR. J. MACRAE.
 ST. ANTHONY'S and ST. LAWRENCE—DR. RICHARD DAGGER.
 WALKER—DR. T. J. RYAN.
 ALL SAINTS', ST. NICHOLAS', ST. ANDREW'S, JESMOND, and ST. THOMAS'—DR.
 FRANK HAWTHORN.
 FENHAM, ARTHUR'S HILL, WESTGATE, and ST. JOHN'S—DR. A. M. PATERSON.
 STEPHENSON, ELSWICK, ARMSTRONG, and BENWELL—DR. G. D. NEWTON.
 NEWCASTLE GENERAL HOSPITAL—DR. G. P. HARLAN.
 VACCINATION OFFICERS—EASTERN—W. H. F. GARRETT.
 WESTERN—W. W. CUMMINGS.

**To Councillor R. W. SIMPSON, M.B., Ch.B.,
etc., Chairman of the Health Committee of
the Corporation of Newcastle upon Tyne.**

SIR,

The depression in industry became even more intense in Newcastle during 1930 than in the previous year. Shipbuilding was equally depressed, and showed little tendency to improvement. Things were similarly bad in the coal trade, and periodically there was news of still another colliery in the north-east being closed down.

The "cost of living" figure fell 12 points during 1930, from 67 per cent. above the pre-war rate to 55 points over it.

According to the information kindly supplied by the Manager of the Labour Exchange, male unemployment increased from 16,198 in January to 20,045 in December. Unemployment amongst women increased from 2,269 in January to 3,594 in December.

Relief disbursed by the Board of Guardians amounted for the year ending 31st March, 1930, to £310,331, as against £336,601 in 1929, and £383,460 in 1928.

The hospitals and other charities in the City have again been hard hit, and are clamouring for increased support. The Royal Victoria Infirmary has had under consideration the possibility of the establishment of a Contributory Fund for Northumberland and Durham, under which regular payment of a small sum will entitle contributors to hospital treatment for themselves and families. Nothing, as yet, has been decided, however, but the suggestion would seem to hold out much hope for local medical charities.

CLIMATE.—1930 was characterised by mostly fine weather until the latter half of July, following which wet and cold weather prevailed. Altogether 26·76 inches of rain fell, August being the wettest month of the year, with 5·62 inches, and October the driest month, with 0·91 inches. In June there was quite a heat wave, the temperature reaching 93°F. on the 19th of that month.

Sunshine Records were maintained by Professor G. W. Todd at Armstrong College, and by Professor J. A. Hanley at Cockle Park, just beyond Morpeth. At Armstrong College there were 1,076 hours of sunshine, as compared with 1,211 hours in the previous year, while at Cockle Park there were 1,323 hours, as compared with 1,566 in 1929. The City therefore had again only three-quarters of the sunshine that penetrated into the surrounding country districts.

The prospect of dealing with **atmospheric pollution** in the only logical way—by a Regional Committee controlling the whole of the smoke producing area of Tyne-side—appears hopeless, at present at least.

During the past year the various gauges in the City record a uniform slight improvement, which may be a reflection, however, of the unfortunate state of trade. The advent of the “grid,” with the resultant abolition of the Tramways Electric Power Station, is hopefully anticipated. The deposit recorded in the vicinity of the Power Station is still practically three times that in any other industrial part of the town, and is mainly composed of ash. The use of smokeless fuel, in the form of low temperature carbonised material, of which several varieties are manufactured in the neighbourhood, or of gas coke, continues to make progress, though slowly. Besides the

Medical Officer of Health himself, a number of medical practitioners in the City now use the last-named with complete success. In spite of the use of gas burners for lighting the fuel, an economy of about 10 per cent. results from the adoption of coke, together with an infinitely more efficient fire, the absence of smoke, the elimination of the sweep, and much greater cleanliness in stoking. "Fumes," of which there appears to be so widespread a dread, are not experienced at all—provided that the chimneys do not smoke ordinarily with a coal fire. The continued use in open fireplaces of raw coal is just an example of our innate old-fashioned conservation.

In view of the Census which has been taken in 1931, the Registrar General made no estimate of **POPULATION** for 1930, and that of 1929 has been used for all calculations for 1930. The Census population has now been announced at 283,145 for Newcastle, much in accord with past estimates.

The number of **MARRIAGES** during the year 1930 was 2,270—much about the same as in recent years.

The **BIRTH RATE** rose to 18·4 births per 1,000 population, as against 18·1 in 1929. That for the whole country was 16·3. Newcastle's birth rate was the second lowest yet recorded for the City—that for 1929 being the lowest.

The **GENERAL DEATH RATE** was 12·6 per 1,000, as compared with 13·8 in 1929. It was 11·4 for England and Wales, and 11·5 for the great towns. 12·6 is the lowest death rate but one (12·4 in 1927) that the City has experienced.

The natural increase of population (births minus deaths) was 1,657.

A broad analysis of the causes of death shows that diseases of the **Circulatory System** constitute a constantly preponderating and growing class, which in 1930 accounted for over 24 per cent. of the total deaths, as against 23 per cent. in the previous year. These were caused by rheumatism, by stress and strain, and by late effects of such racial poisons as syphilis and alcoholism.

Respiratory Diseases caused over 13 per cent. of all deaths in 1930, as against 15 per cent. in 1929.

Diseases of the **Nervous System** claimed seven per cent. of the total deaths, as compared with eight per cent. in the preceding year.

Diseases of the **Digestive System** caused about six per cent. of the total deaths, a comparatively low proportion.

Cancer deaths showed a slight increase, there having been 394 in 1930, as compared with 389 in 1929. They constituted 11 per cent. of the total deaths in the City. In 130 cases the disease affected the stomach or liver, and in 91 the intestines; that is to say, in more than half the deaths the part affected was the digestive tract; in 71 cases the female genital organs or breast were involved; in 22 some part of the mouth; and other organs in 80. 198 deaths occurred in males and 196 in females, whereas the females usually preponderate. The average age at death was 61 for males and 59 for females.

Diabetes accounted for 46 deaths, including one between five and 15 years, and two between 15 and 25 years. There were 28 deaths in 1929. So far since the introduction of *Insulin*, in 1923, for treatment of Diabetes, there have been five deaths under two years, three between 5 and 15, and six between 15 and 25 years;

whereas in the seven preceding years there was one death between 2 and 5 years of age, nine between 5 and 15, and 19 between 15 and 25. Insulin is not a cure, but supplements the defective function of the pancreas and its administration therefore has to be continuous.

EPIDEMIC AND INFECTIOUS DISEASE incidence was again low, and in respect of this, the year has again been very healthy.

There was no case of **Smallpox**, as compared with 21 in 1929. Infantile vaccination rose from 64 per cent. in 1929 to 67 per cent. in 1930. Supervision of this has at last been relegated to the Health Committee, and an end has been put to the previous anomaly by which the Health Committee was charged with the prevention of smallpox, the chief means for which was carried out by another Authority. No change has been made for the present in the actual methods adopted.

The Parish of Walker, formerly in the Tynemouth Poor Law area, is now included in Newcastle.

Measles occurred in very mild form up to the end of October, and in epidemic form during November and December. There were 62 cases admitted to the City Hospital—of whom 10 died. There were 17 deaths, representing a case mortality of 0·87 per cent. of the cases notified (1,954). Health Visitors attended at 83 per cent. of the patients' homes to ensure that doctors' orders were being carried out, and to trace other un-notified or suspected cases on whom a doctor ought to be in attendance.

Whooping Cough fortunately took a low toll in 1930, causing only 29 deaths (0·10 per 1,000 of population).

Influenza and Pneumonia accounted for 294 deaths, as against 457 in 1929. 40 per cent. of the deaths occurred below the age of five years. 987 cases of pneumonia, including influenzal pneumonia, were notified, and 92 per cent. of these were visited by the Health Visitors. Influenza was most prevalent in January and February, but cleared up with the occurrence of fine bright weather in the first week of March.

Newcastle again experienced a low incidence of **Diphtheria** (200 cases, as compared with 259 in 1929). The type of the disease was less severe, and the case mortality fell from 5·4 to 2·0 per cent., a very inconsiderable figure, and much less than we have been accustomed to in the past, although diphtheria has not for many years been of severe incidence in Newcastle. All children admitted to the City Hospital with other diseases are immunised against diphtheria, the consent of the parents being obtained when the child is removed from its home.

Scarlet Fever shows a slight rise in 1930. There were 634 cases, with four deaths (0·01 per 1,000 population), as against 584 cases with five deaths in the previous year. Upwards of 90 per cent. of the cases were removed to Hospital.

Enteric Fever (typhoid and para-typhoid) was found in 43 persons belonging to Newcastle; six with typhoid and 37 with para-typhoid B infection. Besides these were notified 25 other cases in persons from outside the City, eight of typhoid (of which two were fatal) and 17 of para-typhoid.

Among the cases was one outbreak, involving at least 21 Newcastle persons, which was associated with a large dairy, in which the milk was subjected to a pro-

cess of pasteurisation ; this particular outbreak lasted from July to November. Serological examination of the staff of the dairy discovered one "carrier," whose wife and two children also showed signs of recent infection. Their connection with the milk appeared to be consequential rather than causative. Extensive investigations at the dairy failed to reveal the cause of the trouble, nor was it possible to detect any suspicious circumstance at the supplying farms. Since then, the dairy in question has been registered under the Milk (Special Designations) Order, as producers of "pasteurised" milk, and is under close inspection and control.

Diarrhœa caused 70 deaths, of which 50 were children under two years of age. This is the lowest number of deaths on record. It compared with 93 deaths during 1929, and it is a marked contrast with the number of deaths which occurred annually at the beginning of this century, when the numbers used to vary from 130 to almost 400.

Dysentery was discovered and confirmed bacteriologically in 87 persons, five of whom belonged to outside areas, and there were five deaths. 78 of the 87 cases occurred in children under 15. 84 of the patients were admitted to the City Hospital. Two small outbreaks (of eight and five cases respectively) of the disease occurred in a children's ward of the Newcastle General Hospital, and were caused by different types of the dysentery bacillus. The association or connection between dysentery and summer diarrhœa has long been suspected, but has not as yet been definitely proved. No case was discharged from hospital or from supervision until the stools were proved to be free from the causative organisms. Of these no less than five distinct

bacteria were implicated—three of them being strains of the Flexner bacillus and one each of the Sonne bacillus and of the Newcastle bacillus, the last discovered a couple of years ago. Close investigation of all cases discovered is still proceeding. Probably dysentery has always been present in this part of the country, the earliest reports of the Newcastle Dispensary being full of records of this disease—particularly during the 18th century. Dr. Charles has particularly identified himself with investigations of dysentery, which have attracted considerable attention in the medical profession in Great Britain.

There were no cases of **Food Poisoning** reported.

Acute Poliomyelitis, or infantile paralysis, was notified in eight cases. No deaths occurred. There were 25 cases of **Cerebro-Spinal Fever**, with 19 deaths—an unusually heavy mortality (76 per cent.). The cases were scattered and there appeared to be no special cause for their severe nature. Three cases of **Encephalitis Lethargica** (“sleepy sickness”) occurred, with four deaths (one of the latter being that of a case notified in the previous year). All known recovered cases are sought out every year to ascertain their after-history. Since 1919 there have been 356 notifications, and 157 cases have been admitted to hospital. Of 290, whose history it has been possible to ascertain, 140 are known to be dead, 51 to be totally incapacitated; 18 have after-effects, which interfere with their usual occupations, and 30 have more or less serious sequelæ, but not preventing their continuance at their trades. 51 are believed to have been cured. A number have been or are in mental hospitals, others form a serious problem for Mental Deficiency Committees, and many con-

stitute a grave burden for their parents or friends. The disease is a terrible one—perhaps the most to be dreaded of all—and its cure has not yet been discovered.

Reference is made to **Tuberculosis** under a special heading subsequently.

Hospitals for Infectious Diseases.—To the City Hospital, Walker Gate, with its approximate 338 beds, were admitted 1,649 cases of fever, etc., and 442 cases of pulmonary tuberculosis. The constant population of advanced cases of pulmonary tuberculosis has been augmented by the transfer to Walker Gate of a number of cases formerly accommodated at the Poor Law Hospital, so that the new ward opened in 1929 does not supply all needs, which still have to be met by the occupation by tuberculous cases of one of the temporary pavilions belonging to the fever side of the hospital. The further augmentation of the advanced case hospital by another pavilion appears to be inevitable.

The work of equipping the fever pavilions with outside verandahs for the treatment of patients is being proceeded with, each pavilion having one verandah now, and a second verandah having just been installed in the first of the series. The value of every ward has been immensely increased by these fine open air additions, in which some cases, at least, can obtain treatment at all times of the year.

584 cases of Scarlet Fever were admitted to the Infectious Diseases side of the Hospital, and of these four died, equivalent to a case mortality of 0·7 per cent. This is very much lower than the average of the case mortality during the quinquennium 1891-1895, *i.e.*, 40 years ago, when it was 3·1 per cent. 158 cases of diphtheria were admitted to the wards, and there were

four deaths—equivalent to a 2·5 per cent. case mortality ; as compared with 28·3 during the quinquennium 1891-1895. There were 66 admissions of the enteric group of fevers, with a case mortality of 3·0 per cent. There are very many fewer cases of enteric nowadays than previously, so that comparison is difficult.

43 per cent. of the cases of scarlet fever admitted were rather more serious, and were treated with scarlet fever antitoxin, which definitely shortens the stay in hospital of severe cases, and clears them up and prevents complications. The antitoxin is, in fact, indispensable in the treatment of scarlet fever.

MR. FRANK WILSON, the visiting Oto-Rhinologist, operated upon three patients (two for enlarged tonsils, and one for mastoid infection) with complete recovery. The use of antitoxin probably accounts for the considerable reduction in recent years in the number of cases requiring operation. The average stay in Hospital of cases of scarlet fever was 32·5 days. The return case rate was 2·7 per cent., a very creditable record.

117 members of the nursing and domestic staff suffered from various illnesses, resulting in 1,735 working days being lost through ill-health. Only one case of infectious disease occurred, and that in a new nurse on duty in the tuberculosis wards who contracted scarlet fever. She had not yet received protective immunisation, and was infected by a patient in the sanatorium.

Other diseases than scarlet fever, diphtheria or enteric fever are admitted to hospital, according to circumstances, and in 1930 these included 124 cases of pneumonia, of whom 27, or 22·0 per cent., died ; 79 measles (including 17 rubella), of whom 10, or 12 per cent., died ; 107 erysipelas (11 deaths) ; 22 chickenpox, 24

cerebro-spinal fever, 103 gastro-intestinal conditions other than enteric fever, 20 whooping cough and four ophthalmia neonatorum. The cases of pneumonia are admitted for the prevention of spread of the disease to others, and in the interests of sufferers whose home conditions are not favourable to the care and nursing that is their chief need.

The **Tyne Port Sanitary Authority** continues to send its fever cases to the City Hospital. These only numbered two in 1930.

The **Smallpox and Isolation Hospitals**, with 72 and 100 beds respectively, were not required during 1930, there having been no case of smallpox in the City.

Bacteriological Examinations.—8,153 specimens for examination were submitted to the Department of Bacteriology of the College of Medicine. This is the highest number of examinations carried out in any year. The increase is largely accounted for by the considerable number of investigations in connection with dysentery. 3,233 examinations were in respect of diphtheria, tuberculosis, and enteric fever, 3,028 were for venereal disease, 860 were of milk, 249 of water, and the remaining 783 were special investigations.

The **Disinfecting Station** at Walker Gate dealt with 42,955 articles from the City and the hospitals. The total amount spent by the Health Department on chemical disinfectants (formalin, izal, etc.), only amounted to £44, of which £22 was for the hospitals.

The **Venereal Disease** clinic at the Royal Victoria Infirmary, under PROFESSOR SIR ROBERT A. BOLAM, Chief Specialist Medical Officer, dealt with 812 new cases in 1930, including 246 syphilis, 417 gonorrhœa, three

soft chancre, and 146 conditions not venereal. The average number of attendances per patient was 15·2, as against 15·3 in the previous year. 28 per cent. of patients ceased their attendance before the completion of treatment, as against 38 per cent. in 1929.

Ophthalmia Neonatorum (inflammation of the eyes in the newly-born, and usually due to gonorrhœal infection from the mother), was notified in 82 instances. One case occurred in a hospital. There were 72 cases in the previous year. 80 were visited by the Health Department, and 73 were known to have recovered completely, three incurred slightly defective vision, three died (two as the result of premature birth, and one from bronchitis), while one was lost sight of.

There are 577 registered blind persons in Newcastle to-day, and of these 80 are notified to have been blind from birth, but none is under five years of age, which may be considered satisfactory proof of the efficiency with which ophthalmia neonatorum is looked after.

The three **Police Women** attached to the establishment at the Central Police Station are employed chiefly as matrons, but are available for patrol and other duties.

MATERNITY AND CHILD WELFARE.—The Maternity and Child Welfare Section, under DR. A. F. G. SPINKS, has had a year of general progress—both in results and in regard to the means of attaining these. The three new centres inaugurated during the year have worked well and satisfactorily, and have supplied a great need in the newer housing areas. The increased staff necessitated by the extensions was found not to be forthcoming, so a training course was established in the Department. 14 pupils were entered, ten being

subsidised, the expenses being met partly by the pupils themselves and partly by Government grant. The ten subsidised pupils were paid a salary of £100 per annum, for which they undertook to do their six months' training, and to sit for the examination at the end of that time, and thereafter remain for six months as Health Visitors. At the official examination held in April, 1931, by the Royal Sanitary Institute, 16 candidates sat, including two members of the Health Department staff of Health Visitors. 13 passed, including the four private students and the two Health Visitors. From the successes the Department has been able to fill all vacancies on the permanent staff, which will eventually number 28. The increased number of staff has resulted in a corresponding extension in the work undertaken, and there is already a substantial improvement in the mortality among infants. This fell to 74 per 1,000 births in 1930—a drop of 11 upon 1929, and the lowest figure yet attained.

The **Maternal Mortality** rate, which for the last year or two has been, for Newcastle, high, has also fallen, though only slightly. It is now 5·4, as against 5·9 per 1,000 births in 1929. Every effort is being made to combat the risks to mothers by means of pre-natal care and improved treatment at the confinement and afterwards. Indeed, over 60 per cent. of the City's mothers are seen at the ante-natal centres of the Health Department or of the Princess Mary Maternity Hospital alone, while it would appear to be exceptional for women attended by doctors and midwives not to have been previously under their care before the actual confinement. Closer and closer attention is given to this pre-natal work every year, in the confident expectation that it will bear fruit in greater safety for childbirth.

The Departmental Committee as to Maternal Mortality and Morbidity has issued its Interim Report as to measures that are advisable, but no action has as yet been taken by the Government. The lines upon which the Committee has reported were those presented in this Report last year, and, as far as possible, without compulsory legislation, those lines have been followed in this City.

Approximately, confinements are pretty evenly divided between doctors, the Princess Mary Maternity Hospital, and midwives. Of the last-named there are 38 practising in the City, three only remaining of the *bona-fide* (*i.e.*, uncertificated) class. Midwives receive regular supervision and tuition by the Superintendent of Midwives, Miss GEORGINA B. CAMERON.

In 1930 doctors were sent for at the request of midwives in cases of emergency 422 times.

A **Dental Clinic** for the young has also been established during the year.

The linking up of the work of the welfare centres with the School Medical Service Clinics has been completed, and on children passing to school their records are handed over to the School Medical Officer, and incorporated with the school medical service records. It must not be forgotten that although every effort is made to maintain supervision of babies until they actually pass into school, such supervision is not compulsory, as it is in the case of school children.

The distribution of dried milk amounted to 35½ tons (equal to 49,765 gallons of fresh milk) given free to 2,952 babies and expectant mothers, while coupons for 17 tons (equal to 23,627 gallons of fresh milk) at cost

price, were given to 1,384 babies. In 1929 the quantities were 28 tons free, and 17 tons at cost price. Only mothers attending the Centres with their infants were so assisted, 33·6 per cent. receiving free milk and 17·8 per cent. coupons for the cost price article.

Statements have been made that dried milk is a much inferior article to fresh milk for feeding babies, being deficient in the vitamin that prevents and cures rickets. While it is not contended that dried milk is superior, or even as good, as the very best and purest fresh milk, this latter is of such exceptional occurrence that dried milk is an infinitely purer and cleaner article for the use of the average family than the ordinary retail milk. That it is deficient in anti-rachitic vitamin is a mischievous assertion, founded upon insufficient knowledge. Very particular attention was paid to this point before it was ever decided to use dried milk in Newcastle, the very highest scientific assurances being first obtained.

Supervision of boarded-out children, and the care of children under five, both relegated to the Maternity and Child Welfare Sub-Committee by the Health Committee, continued smoothly under existing arrangements.

Most excellent voluntary services have been rendered by MRS. R. WILLIAMSON and her 35 regular **voluntary workers** at the Welfare Centres, and to them the Department owes a debt of gratitude.

The **Princess Mary Maternity Hospital** carried on its invaluable public service in close harmony and conjunction with the Health Department. Its future development is still under consideration.

The *Babies' Hospital* and *Mothercraft Centre*, the *Fleming Memorial Hospital* and the *Newcastle Day Nursery* are also the valuable allies of the Health Committee in its fight for child life. Each receives a contribution from civic funds.

Under the **Nursing Homes Registration Act, 1927**, 22 homes are registered, five for maternity cases and 17 for maternity, medical, and surgical purposes. One home was exempted from registration under Sections 6 and 7 of the Act. Inspections and re-inspections are carried out for the Medical Officer of Health by the Maternity and Child Welfare Medical Officer and the Chief Health Visitor, and the assistance of the Chief Constable is also afforded in regard to the facilities possessed by the homes for preventing, quelling, and escaping from, fire. All the homes are of satisfactory type, and are well conducted.

TUBERCULOSIS.—The death rate from tuberculosis, pulmonary and otherwise, was 1·29, which is the lowest figure yet reached in Newcastle. That from pulmonary form was 1·05, which is equal to the lowest recorded, and from the non-pulmonary form 0·24 per 1,000 population, which has not previously been equalled. There were 44 fewer notifications (507) of cases of the pulmonary form of the disease than in the previous year, and 24 fewer (212) of the non-pulmonary.

DR. GEORGE HURRELL (Tuberculosis Medical Officer) reports that the year has been one of considerable encouragement in the war against the so-called white plague.

The new ward block at the Sanatorium Pavilions at the City Hospital for Infectious Diseases has been continuously occupied, and while more than proving its

value, has been inadequate to meet the conditions resulting from the transfer of the Poor Law Hospital cases, which have again necessitated the use for tuberculosis of one of the temporary wards belonging to the fever section of the hospital. This transfer enabled the setting aside of 52 beds at the Newcastle General Hospital for the treatment of surgical tuberculosis.

Ten cases admitted to the Advanced Case Hospital improved sufficiently for admission to Barrasford Sanatorium.

Owing to the development of tuberculosis by a member of the staff at the City Hospital, an X-Ray record has now been established of every nurse and domestic employed there. This should prove a measure of considerable protection in the future, both to the Committee and the staff themselves.

The installation of an X-Ray plant is badly needed at the Tuberculosis Dispensary, its consideration having been postponed during the year under report, when it was found that only 60 per cent. of the dispensary patients who required this examination could be so inspected.

Notification in 5·4 per cent. of the pulmonary cases had not been made prior to death, and 25·8 per cent. of them were notified only within three months of death. This is a slightly lower proportion than usual, and is due mainly to neglect of the sufferers to consult a doctor until the disease is well advanced, and to the notoriously rapid course of much of the disease in this north-east region of England. 85·5 per cent. of all the patients suffering from tuberculosis of the lungs who attended the dispensary and died in 1930 had received treatment in one or other of the hospitals at least once. The

dispensary deals with all notified cases, and relegates them to the doctor or appropriate institution for treatment, and keeps in touch with them wherever they are. The other members of the patients' households are overhauled, if at all possible, for the discovery of any early signs of the disease, in order that treatment may be initiated without delay.

At **Stannington Sanatorium**, where 30 beds are leased for children, half of whom may be suffering from surgical tuberculosis, the average stay was 217 days for boys and 289 for girls. This is an increase of 41 days for boys and 12 days for girls upon the figures for 1929. Of the 38 patients 19 were improved, while quiescence of the disease was obtained in all the rest.

At **Barrasford Sanatorium** the Medical Superintendent, Dr. C. G. R. GOODWIN, reports the continued discomfort and inconvenience experienced by the staff from lack of accommodation. The recent re-consideration of the provision of an adequate nurses' home will make an immense difference to the well-being of those workers who, largely on account of their remoteness, are apt to be somewhat overlooked. The new handicrafts shop opened last year has continued to prove itself a real boon to the patients. Besides serving the most valuable need of providing mental occupation for the patients, it provides work of excellent quality for the Institution. During the year an additional shop for the woodworkers has been added to the equipment of the place, and as it is close to the joiners' shop, it can be readily supervised. The sales during 1930 of completed work have practically balanced the sum expended on materials.

A *Dental Clinic* was set up and fully equipped during the year, and it was soon found that the regular treatment days originally planned were insufficient.

For some years difficulty has been experienced with the water supply, owing to the gradual reduction in the amount yielded by the well. A deeper boring was therefore made, and a plentiful supply tapped. This has relieved all anxiety regarding the recurrent shortages, but some little trouble has occurred owing to a contamination, the source of which has not yet been discovered.

The average stay of patients was about $26\frac{1}{2}$ weeks, which is a continued increase on previous years. It is most encouraging to find patients extending their stay, and so giving themselves the incalculable advantage of prolonged rest. As regards the results of treatment of the 180 cases, in 19 the disease became entirely quiescent. In 116 there was improvement, and in 45 improvement slight or none at all.

At the **Newcastle General Hospital** the top floor of the new block has been reserved for surgical cases of tuberculosis, where they are under the treatment of the surgeons, since the 1st of April, 1930, there having been 72 patients. Of these 31 were children, of whom 20 showed considerable improvement, as did also 15 male and 12 female adults. Eleven children and eight adults died. The remaining six adults remained in *statu quo*.

The **Open Air School** at Pendower continues to render excellent service in the hands of the Medical Officer of the Education Committee. Further extension of this type of institution would be more than welcome,

in spite of the very much improved design and structure of the newer schools that are rapidly springing up about the town.

GENERAL DISEASES.—On 1st April, 1930, the Local Government Act, 1929, came into effect, and the City Council assumed all the functions previously performed by the Board of Guardians. As stated in last year's Report, it had been decided to delegate to the Health Committee all matters concerning health, and as from the "appointed day" the Health Committee took control of the Poor Law Infirmary, which was re-named the Newcastle General Hospital; of the Domiciliary Medical Service; of the care of boarded-out children; of poor children under five years, and of public vaccination. Of these the largest undertaking has been that of the **Newcastle General Hospital**. The scheme followed is that adopted by the City Council on the lines suggested by the Medical Officer of Health and detailed in last year's Report. Considerable progress has been made with this, and a proportion of the new staff has been appointed. Already the existing accommodation has proved far short of that necessary. The Public Assistance Committee, which retains control of the Institution (Elswick Grange) adjoining, is now considering its removal elsewhere, thus releasing the present Institution for the use of the hospital. Close co-operation is being maintained with the voluntary hospitals in the City, every endeavour being made to tighten up the control upon overlapping and duplication of effort.

The object of the Council is to separate entirely the question of pauperism from considerations of health. It was in harmony with this object that the scheme of development of the hospital previously referred to was adopted, and its use by all classes of the population

encouraged, subject to their repayment of the cost of their maintenance. Incidentally, this condition gives a lead to the voluntary bodies which are always struggling against poverty, and begging for funds. Already, without advertisement, there has been a large increase among the voluntary applicants for admission; so much so that in spite of the immediate transfer of cases of pulmonary tuberculosis to the City Hospital, there has been experienced a great shortage of accommodation, and at least 200 additional beds are required at once.

DR. G. P. HARLAN, the Medical Superintendent, has a most difficult task to make the best use of the space he has, giving first consideration to the poor, of course.

Many alterations and improvements have been carried out already by the Health Committee, and there is much more still to be done. As little change as possible has been made, and the change over has been effected with a minimum of disturbance.

Until the immediate developments by the Public Assistance Committee have been decided upon, it is impossible for the Health Committee to settle upon its next movement, since so much depends upon whether the workhouse is to be vacated. Its present propinquity creates an atmosphere that is very unfavourable to the development of a hospital.

The **domiciliary medical service** has been continued on its original basis for the present, but a scheme is now before the Health Committee for the gradual conversion of this from the existing system of "Parish Doctors" to an open panel system, under which patients shall have their own choice of attendant, and the Health Committee shall be responsible for the provision and dispensing of all medicines. A commencement

in about half the City is proposed, in the districts which happen to be at the moment vacant. If successful, the rest of the town will be converted to the panel system by 1935.

FOOD AND PROVISIONS.—377 samples of milk were examined for the presence of tuberculosis, which was found in 16 of them, equivalent to 4·2 per cent. The tuberculous samples came from all over the wide area from which our milk is drawn—Northumberland, Durham, Cumberland, and Dumfriesshire being actually implicated. Every effort is made to safeguard the Newcastle consumer. Graded milks, namely, “Certified” and “Grade A. (Tuberculin-Tested),” which are from tuberculin-tested herds, only amount to somewhere about six per cent. of the total sold. The amount asked for, however, is still increasing, though slowly, and it can only be marvelled at that parents should remain so indifferent to this most serious source of injury to their children, and that doctors, through whose hands pass so many sad cases which are due to infection from milk, do not insist more vigorously upon the necessity and value of this milk, which alone is guaranteed to be safe and free from disease by numerous and regular tests.

The Veterinary Officer and Inspector of Provisions (MR. THOMAS PARKER, F.R.C.V.S.), reports that there are now 17 cow-keepers occupying 28 cow sheds on 18 premises, with 251 milch cows, within the City. This is a decrease of seven cows on last year's number, which is showing a slow but steady diminution. The herds within the City's boundaries are all visited at regular intervals by one or other of the veterinary staff of the Health Department, and five tuberculous animals were found during 1930.

There are 99 separate slaughterhouses in 15 different localities in the City. Strong and organised opposition is still made to every attempt by the Health Committee to make progress with the establishment of a single public abattoir for the City. Farmers and butchers seem to dread the idea, and oppose every movement made towards more complete inspection, and it is from them that the loudest outcries always arise. This scarcely harmonises with their hearty professions of support of the Committee's desire for the abolition of diseased meat!

576 animals were found on slaughter to be tuberculous, an increase of 28 per cent. on the previous year. Of the carcasses condemned as unfit for food, 35·4 per cent. were tuberculous.

337 food-carrying vessels came to the Quayside during 1930, which is 33 more than in 1929. All imported articles were kept under supervision by the staff.

Food and Drugs Adulteration Acts.—The Inspector under the Food and Drugs Act (MR. C. RAIMES) reports the taking of 1,155 samples for analysis, including 873 of milk. Of the latter, 521 were rough-tested in the Health Department, and appeared to be genuine. Of the remaining 352 the Public Analysts (DR. J. T. DUNN and MR. H. C. L. BLOXAM) found 19 to be below the minimal limits fixed by the Sale of Milk Regulations, 1901. Of the 282 samples of food and drugs, other than milk, eight were found to be “not genuine.”

19 milk cases were dealt with. Three were taken to Court; one conviction was obtained, with a fine of one pound. Two cases were dismissed. Cautions were issued by the Health Committee in respect of 15, and no proceedings were taken in one case.

Six samples of condensed milk were taken under the Public Health (Condensed Milk) Regulations, 1923, and all of these complied with the requirements.

296 samples of milk were examined for evidence of excremental pollution, which was found present to an undesirable degree in 94 (or 31·7 per cent.), as compared with 30 per cent. in 1929, and 15·9 in 1928.

Over 23,000 empty milk churns were examined at the railway stations in course of return to the farmers, and 33 of them were found not to have been rinsed out. There were examined, in addition to the foregoing, 3,629 empty churns passing through Newcastle in course of transit to the farms from retailers outside the City. 15 of these were found unrinsed. In every instance of defect the responsible retailer within the City was communicated with, and the result of the warning proved satisfactory in each instance. The Agricultural Department of Armstrong College continues its efforts to spread information among farmers and dairymen, holding classes for the purpose.

21 applications were received for permission to retail milk, 12 being granted and nine refused. At the close of the year there were 693 retail milk shops in the City, including 64 belonging to 10 large dairymen. Of the total, 70 were shops in which only dairy products and like commodities were retailed ; 258 were shops selling other articles, and 40 were hawkers.

The ice-cream trade has been maintained under supervision, and permits to manufacturers and to sellers are given by the Health Department. 41 applications were received during the year, and 16 were refused owing to the sanitary conditions being bad. Restaurant kitchens (which include hotels, cafés, and dining rooms,

and number 123), together with margarine warehouses and fried fish shops, have been regularly inspected. The restaurant kitchens are inspected as “work places,” and as they come within the scope of the Public Health (Meat) Regulations, 1924, as well, the Veterinary Officer, working in conjunction with the Inspector of Workshops, has also been able to effect certain improvements.

Bread baking is still carried on in 81 domestic bakeries, where small quantities are made and sold to people round about. This state of affairs, although not illegal, is not desirable.

180 samples of water were examined for the presence of *bacillus coli* as indicative of excremental pollution, animal or human. 128 were characterised by the Bacteriologist at the College of Medicine as satisfactory, 28 as fair, 21 as unsatisfactory, and three as bad. The water is treated by sand filtration in filter beds, and by rapid filtration through batteries of high pressure filters, in addition to which it is chlorinated.

There are eight **Swimming Baths** in the City, all of them being equipped with a continuous system of filtration and æration (Royle’s or Turnover). The complete conversion of all our public baths to a satisfactory purification system is something to be proud of.

THE HOUSE AND THE WORKPLACE.—Nuisance Abatement.—The Senior Sanitary Inspector (MR. C. RAIMES), dealt with 14,318 nuisances, which is 2,222 more than in 1929. In connection with these, 6,967 notices were served, and in all but 64 instances were effective without legal proceedings.

364 privies were converted to the water carriage system, and of these 316 were pail-closets, 32 were “cell” privies, and 16 were privies (in combination with seven

ashpits); 314 dry ashpits were also removed, and replaced by portable dustbins. The rate of conversion has again been slower than in the previous year, which is accounted for by the difficulty in effecting the conversion of the relatively few and least objectionable of the privies remaining in the City. At the end of 1930 there were 698 privies still in existence, of which 666 were pail closets. A strenuous effort is being made to obtain the conversion of all of these by the end of 1931.

Atmospheric Pollution.—557 observations were made of 102 industrial chimneys, 11 of which showed excessive output of smoke on 15 occasions. No statutory notices were issued, but each offender was communicated with. Close attention has been paid to steam road wagons, but no offence by them in regard to output of smoke was detected.

HOUSING.—The overcrowding among the very poor still continues, although a considerable alleviation is taking place as the result of building by the Housing Committee, which by the end of 1930 had completed 5,549 houses since the War, while 3,297 had been erected by private enterprise. 590 new houses were erected during the year, 223 in Corporation Schemes and 367 by private enterprise, and at the end of the year there were 1,059 in course of erection by the Corporation. Provision has been made for the construction of a small proportion of two-roomed houses for aged persons in the latest schemes of the Housing Committee.

In 1930 the death rates were 14·3 in St. Andrew's, 15·4 in St. John's, 14·9 in Elswick, and 14·7 in Stephenson Wards, where congestion is great, as compared with 9·9 in Fenham, 10·0 in Dene, and 11·4 in Jesmond Wards. As indicating the influence of overcrowding upon the

liability to tuberculosis, the attack rate per 1,000 population of pulmonary tuberculosis was 2.66 in St. Andrew's Ward, as against 0.27 in Jesmond.

The passing of the **Housing Act, 1930**, enabled the Insanitary Property Sub-Committee to go ahead with condemnation of insanitary areas with much greater facility than hitherto. The case of Elswick East Terrace was redrafted in accordance with the conditions of the Act, and approved by Council, and was placed before the Ministry about the end of the year. The Walker areas, comprising 96 houses of 144 separate families, were placed before Council, which subsequently gave its approval of the scheme for clearance of these. Proceedings against other areas are now in comparatively rapid progress. The Tenement Byelaws are vigorously enforced, bringing about improved conditions in individual houses with regard to accessible water supply and sinks, washing facilities, closet accommodation, ventilated food stores, and lighting. As indicative of the greater willingness of owners to comply with requests, it was only found necessary to institute proceedings in 88 cases, as compared with 198 during the previous year.

At the end of 1929 there were 22 **caravans** in occupation in different parts of the town, and by the end of 1930 these had been reduced to five. This almost completes the measures for dealing with what a year or two ago constituted a veritable infestation of the City by these nomads, which, until the passing of our last Byelaws in 1924, it had been impossible to prevent, and which even so has proved by no means easy to put an end to.

There were 36 **common lodging houses** in 1930, and these were well conducted. A revised set of Byelaws for the regulation of these houses has been prepared, and has just been approved by the City Council.

Factories and Workshops, Offices, Places of Amusement and Schools.—9,372 inspections of factories and workplaces were made, and 246 notices to remedy defects were served. The homes of outworkers were also kept under observation.

Close attention has been paid to the condition of **cinemas and theatres** by the Senior Sanitary Inspector. The Kata-thermometer is used to test the efficiency of ventilation. 82 tests were made on 36 different premises, the results showing a slight improvement upon those made during the previous year, which were fairly satisfactory. 28 halls proved “first-class” and eight “second class.” The standard adopted is that the cooling power should not be below six by the dry Kata-thermometer nor below 18 by the wet Kata.

The **Temperance Festival** was held in June, and attracted an enormous concourse of people. In its public health aspects this great fair was well managed. Sanitary accommodation was adequate, and the ice-cream, milk and food stuff retailers were kept under close control.

POPULAR EDUCATION.—Numerous lectures and addresses on public health subjects were given by the medical staff to social bodies of various kinds in the City. The monthly journal **Better Health**, edited and published by the Central Council for Health Education of the Society of Medical Officers of Health, was issued regularly, two pages of local matter being contributed by the Health Department staff and incorporated with the rest of the magazine. 4,000 copies are issued free each month, the list of recipients being carefully selected. This little magazine appears to be much appreciated, and serves a very valuable purpose.

It is with deep regret that the death on 6th November, 1930, of Councillor John Barker, J.P., is to be recorded. Mr. Barker was an indefatigable worker for the good of his fellows. On the Health Committee, of which he first became a member in 1915, he was particularly identified with the Tuberculosis Sub-Committee, of which he was Chairman. He was always foremost in the advocacy of any measure that would alleviate suffering or distress, and never spared himself in such work. The Insanitary Property Committee also found in him an enthusiastic supporter.

In November the Health Committee received the honour of having its Vice-Chairman, Alderman David Adams, J.P., elected Lord Mayor. During his year of office, and to ensure continuity of the work of the Health Committee, Councillor Walter Thompson was appointed Deputy Vice-Chairman.

Owing to the Local Government Act, 1929, the last two years have proved extraordinarily heavy ones for the staff of the Health Department. As the result of tremendous efforts and application, Newcastle Council was one of the first, if not the first, to submit to the Ministry of Health its scheme for the carrying out of the duties imposed by that epoch-making legislation. The proposals were approved and are being carried into effect rapidly and without friction. Only those who are concerned with the work can appreciate what this has entailed in continuous strain. To the Town Clerk, MR. A. M. OLIVER, O.B.E., M.A., belongs much of the credit for the promptness with which Newcastle Council was able to deal with the problem.

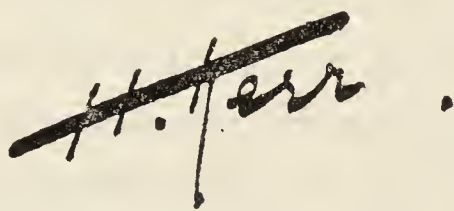
The Council having decided to delegate to the Health Committee all functions of the late Board of Guardians which concern health, a very large amount of new work fell upon the Health Department. This has been undertaken with the greatest cheerfulness by the staff, and to them, as also to the late Deputy Town Clerk, Mr. PHILIP HARROLD, my most sincere acknowledgments are due.

Attention must be drawn to the extremely unsatisfactory office accommodation. This is much overcrowded, involving both discomfort and inconvenience, which urgently calls for alleviation.

To yourself, Sir, and to the Vice-Chairman and Members of the Health Committee, I have been indebted as always for your constant support and advice in times often of considerable difficulty, and for your unfailing consideration.

I have the honour to be, Sir,

Your obedient servant,



M.D.,

Medical Officer of Health.

*Health Department,
Town Hall,
Newcastle-upon-Tyne,
26th June, 1931.*

CITY AND COUNTY OF NEWCASTLE UPON TYNE.

Health Report, 1930.

I.—GENERAL.

MORTALITY TABLES,
SOCIAL CONDITIONS, CLIMATOLOGY,
WATER SUPPLY, DISPOSAL OF REFUSE.

Population, Birth Rate, and Special Mortality Rates during the period of the Notification of Infectious Diseases.

YEAR.	POPULATION.	BIRTH RATE.	GENERAL DEATH RATE.	INFANTILE MORTALITY (Deaths per 1,000 Births).	PUERPERAL SEPSIS.		TOTAL MATERNAL DEATHS.		ZYMOTIC DEATH RATE.	DIARRHOEA AND ENTERITIS (ALL AGES).		SMALLPOX.			TYPHUS.		ENTERIC FEVER.					DIPHTHERIA.				SCARLET FEVER.				ERYSIPELAS.				MEASLES.**			WHOOPING COUGH.		CANCER.		TUBERCULOSIS.				YEAR.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
					Number of Cases Notified.	Number of Deaths.	Death Rate per 1,000 Births.	Number of Deaths.		Death Rate per 1,000 Live Births.	Number of Deaths.	Death Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Case Mortality per cent.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Cases Notified.	Number of Deaths.	Death Rate per 1,000 Population.	Number of Deaths.	Death Rate per 1,000 Population.	Number of Deaths.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Number of Deaths.	Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.	Number of Deaths.		Death Rate per 1,000 Population.	Attack Rate per 1,000 Population.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
1883	153,756	35.6	24.7	168	7	1	0.18	?	4.1	105	0.68	493	60	12.2	0.39	3.2	96	24	216	42	15.4	0.27	1.41	29	11	37.9	0.07	0.19	1,152	124	10.8	0.81	7.5	?	..	?	209	1.36	51	0.33	?	?	..	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	..	

GENERAL STATISTICS.

POPULATION.—As estimated by the Registrar General at the middle of the year 1929—**283,400.**

RETURN SHEWING THE ESTIMATED POPULATION OF THE DIFFERENT
WARDS IN THE CITY, ACREAGE, POPULATION PER ACRE, ETC.

Ward.	Population (estimated)	Gross Area in acres.	Less for Public Open Spaces in acres.	Net Area in acres.	Population per acre.	
					Gross.	Net.
St. Nicholas'	2,702	127	1	126	21	21
St. Thomas'	13,654	1,636	1,101	535	8	26
St. John's	15,082	169	3	166	89	91
Stephenson	18,414	215	..	215	86	86
Armstrong	15,349	178	31	147	86	104
Elswick	12,531	253	17	236	50	53
Westgate	15,002	90	1	89	167	169
Arthur's Hill	11,252	142	6	136	79	83
Benwell	18,225	550	31	519	33	35
Fenham	18,034	1,189	14	1,175	15	15
All Saints'	17,384	176	2	174	99	110
St. Andrew's	11,631	173	3	170	67	68
Jesmond.. .. .	10,991	441	33	408	25	27
Dene	15,871	818	88	730	19	22
Heaton	15,230	225	27	198	68	79
Byker	17,182	140	..	140	122	122
St. Lawrence	17,607	181	7	174	97	101
St. Anthony's	15,500	601	12	589	26	26
Walker	21,759	1,149	34	1,115	19	19
CITY	283,400	8,453	1,411	7,042	33	40

INHABITED HOUSES.—**66,529** inhabited houses, which, on the estimated population, shows an average of 4·26 persons per dwelling.

RATEABLE VALUE. — **£2,262,668.** A penny rate produced £8,768.

SOCIAL CONDITIONS.—The principal **Trades and Occupations** are of a healthy nature, being generally engineering and machine making; conveyance of men, goods, and messages; building and works of construction, *e.g.*, ship building; and connected with ships and

boats, sea-faring and harbour work; food, tobacco, drink, and lodging; coal and shale mines; and commercial or business occupations.

The amount of **Public Assistance** granted during the year ended 31st March, 1930, was £275,828 for outdoor relief, and £34,503 for indoor maintenance, making a total of **£310,331**, as compared with **£336,601** in the previous year.

The number of registered male unemployed was 16,198 at the beginning of the year, and 20,045 at its close.

The City contains many **Hospitals** and other medical charities, but since wide surrounding districts are also served by them, figures as to patients treated are not of local value. A list of municipal and voluntary hospitals in the city is given on page 55.

MARRIAGES.—2,270 marriages took place during the year, as compared with 2,271 in 1929, and 2,195 in 1928.

BIRTHS.—5,223, equivalent to a rate of 18·4 per 1,000 population.

DEATHS.—(All causes)—4,665, equivalent to an uncorrected rate of 16·5 per 1,000 population, and, after deduction of the deaths of 1,232 non-citizens, and addition of 133 Newcastle residents who died elsewhere, to a corrected rate of 12·6 per 1,000 population. In 1929 the death rate was 13·8.

18 *Orders for Burial* (Newcastle-upon-Tyne Improvement Act, 1882, Sec. 47) were made, 5 being in respect of bodies lying in inhabited rooms, and 13 being cases from hospital.

TOTAL DEATHS DURING RECENT YEARS FROM CERTAIN CLASSES
OF DISEASE.

Classification in Table III. of Ministry of Health.

	Nervous System.	Circu- latory.	Respira- tory.	Digestive.	External Causes.
1912	410	435	603	204	152
1913	457	453	722	332	114
1914	448	505	863	465	142
1915	470	635	873	361	163
1916	477	448	856	281	117
1917	497	478	864	268	135
1918	498	503	957	252	135
1919	439	497	1,040	272	133
1920	384	534	861	275	124
1921	347	581	726	297	113
1922	363	689	913	181	92
1923	363	623	623	219	112
1924	376	667	749	206	110
1925	359	696	681	248	131
1926	335	742	596	220	158
1927	328	751	615	204	123
1928	331	796	480	247	153
1929	311	893	577	226	148
1930	256	874	469	227	137

INFANTILE MORTALITY.—384 infants died before completing the first year of life, representing a rate of **74** deaths per 1,000 births, the lowest on record.

ZYMOTIC DEATH RATE.—There were 129 deaths from the “ Chief Zymotic Diseases ”—smallpox, measles, scarlet fever, diphtheria, whooping cough, fever (typhus, simple continued, and enteric) and diarrhoea (all ages)—equivalent to 0·46 deaths per 1,000 population.

TUBERCULOSIS.—365 persons died from various forms of tuberculosis, 298 being from pulmonary, and 67 from non-pulmonary. The equivalent death rates are: *all forms* 1·29, *pulmonary* 1·05, and *non-pulmonary* 0·24 per 1,000 population.

For comparison of death rates with previous years see large table page 52A.

For particulars of deaths as to site of disease, age, etc. see table, page 60A.

GEOLOGY.—The geological formation of the area consists of heavy clay on the top of hard sandstone, which overlies coal seams.

CLIMATOLOGY.—The following is a brief summary of the main features of the weather in 1930, as recorded on the “ Newcastle Chronicle’s ” instruments :—

The mean barometer reading was 29·8 inches. The mean maximum and minimum temperatures were 61·53 F., and 39·67 F. respectively.

The heat wave which came about the middle of June was the most noteworthy point in the meteorological record of the year. The hottest day of this drought was the 19th, when the temperature reached 93°F.

The rainfall for the year was 26·76 inches, which considerably exceeded that of 1929, 17·02, which was rather low. August, with a total rainfall of 5·62 inches, was the wettest month.

Although the year may be regarded as a wet one, there were some dry months—October in particular—when the record was only ·91 inches.

During the cold spell in March the temperature dropped to 24·0°F. on the 20th of that month.

The following table shows the frequency of the directions of the wind :—

W.	on	52 days.
N.W.	on	99 „
N.E.	on	47 „
E.	on	14 „
S.E.	on	62 „
S.W.	on	72 „
S.	on	13 „
N.	on	1 day.

Sunshine.

Sunshine records have been available by the courtesy of Professors G. W. Todd and C. Heigham, of Armstrong College. The observations are taken at Cockle Park Farm (fifteen miles north of the City, and in a rural area), and

at the College itself. During the year 1,076 hours of sunshine were registered in the City, as compared with 1,323 at Cockle Park.

WATER SUPPLY.—The City is served by the Newcastle and Gateshead Water Company with a plentiful supply of pure upland surface water, collected from large catchment areas at Catcleugh, close to the Cheviots, and in lower Northumberland. It is stored in large impounding reservoirs at Catcleugh, Hallington, and Whittle Dene, and passes through filters at Whittle Dene and Throckley. It was found, however, that filtration did not secure the degree of freedom from bacteria which was desirable, and during the last few years it has been supplemented by chlorination, with marked improvement.

In the vast majority of cases the household taps are served directly from the mains without intervening cisterns. A separate trade supply is piped to some of the great riverside works from a point above the filters.

The bacteriological reports upon the water are given on page 144.

SEWERAGE.—There are 319 miles of sewers discharging directly into the Tyne, which is tidal, at various points along the seven miles of river frontage.

CLEANSING AND SCAVENGING.—With the exception of certain areas, the ashbins are now only emptied once per week instead of twice. With the prevailing high costs it is improbable that the frequency of removal can be increased.

There are 68,034 dry ashtubs and galvanised iron bins, 182 dry ashpits, and 698 conservancy system closets in the City. Conversion of the latter is proceeding steadily and during 1930, 316 pail-closets, 32 cell privies, and 16 privies (in combination with 7 ashpits)

were removed and water closets substituted. 314 dry ashpits were also removed and dustbins substituted. All the schools are served by the water-carriage system.

ADOPTIVE AND LOCAL ACTS IN FORCE.

Adopted Acts.—Infectious Disease (Prevention) Act, 1890. Section 4.

Public Health Acts Amendment Act, 1890.—Part III—Whole of; Part IV.—Whole of.

Public Health Acts Amendment Act, 1907.—Part II.—Sections 20, 22, 23, 26, 27, 28, 29, 30, 31, and 33; Part III.—Sections 34, 35, 36, 37, 38, 43, 45, 48, 49, 50 and 51; Part IV.—Sections 52, 53, 56, 58, 59, 61, 62, 63, 64, 65 and 68; Part X.—Whole of.

Public Health Act, 1925.—Part II., Sections 15, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33 and 35.

Part III.—Whole of.

Part IV.—Whole of.

Part V.—Whole of.

Local Acts.—Newcastle-upon-Tyne Improvement Act,		1837.
„	„	1846.
„	„	1853.
„	„	1865.
„	„	1870.
„	„	1882.
„	„	1892.
Newcastle-upon-Tyne Tramways and Improvement Act		1899.
Newcastle-upon-Tyne Corporation Act ..		1911.
Newcastle-upon-Tyne Corporation Act ..		1926.

VITAL STATISTICS, YEAR 1930.

COMPARISON WITH OTHER DISTRICTS.

DISTRICT.	Birth Rate.	General Death Rate.	Infantile Mortality Rate.	Death Rate per 1,000 from Enteric Fever, Smallpox, Scarlet Fever, Measles, Whooping Cough, and Diphtheria	Tubercu- losis (all forms) Death Rate.
England and Wales	16.3	11.4	60	0.27	†
107 Great Towns (includ. London)	16.6	11.5	64	0.33	†
NEWCASTLE-UPON-TYNE	18.4	12.6	74	0.20	1.29
Hull	20.6	12.5	68	0.56	1.20
Leeds.....	15.8	12.4	68	0.24	1.11
Bradford	15.1	13.4	73	0.34	0.90
Sheffield	15.1	10.9	67	0.26	0.86
Manchester	16.6	12.7	79	0.38	1.37
Salford	16.1	13.0	85	0.52	1.40
Liverpool	21.5	12.8	82	0.60	1.40
Nottingham	17.0	13.1	78	0.28	1.17
Leicester	15.8	11.2	56	0.10	1.10
Stoke-on-Trent	19.9	11.7	70	0.18	1.25
Birmingham	17.7	10.8	60	0.29	1.02
Cardiff	16.8	11.3	72	0.26	1.14
Bristol	15.7	11.6	58	0.36	1.16
Portsmouth	16.3	11.8	59	0.54	1.02
London (County).....	15.7	11.5	59	0.40	0.99
Gateshead.....	21.4	12.6	91	0.38	1.41
South Shields	20.0	12.9	92	0.20	1.62
Tynemouth.....	19.4	11.9	63	0.35	1.37
Sunderland	21.3	13.5	78	0.28	1.36
Middlesbrough	26.5	14.1	79	0.69	1.63
*County of Northumberland	17.1	11.0	62	0.23	1.00
*County of Durham	20.7	11.2	74	0.28	1.06

* Administrative County.

† Not available.

Vital Statistics of Whole District during 1930 and previous Years.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS		NET DEATHS BELONGING TO THE DISTRICT.			
		Uncorrected Number	Net.		Number	Rate.	of Non-residents registered in the District.	of Residents not registered in the District.	Under 1 Year of Age.		At all Ages.	
			Number	Rate.					Number	Rate per 1,000 Nett Births	Number	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1911	267,261	7,089	7,082	26.5	4,667	17.5	448	165	973	137	4,384	16.4
1912	269,193	7,219	7,194	26.7	4,221	15.7	529	146	727	101	3,838	14.5
1913	271,295	7,480	7,460	27.5	4,611	17.0	560	141	908	122	4,192	15.5
1914	271,523	7,564	7,538	27.8	5,069	18.7	546	138	1,029	137	4,660	17.2
1915	278,107	7,575	7,545	27.8	5,257	18.9	693	207	1,007	133	4,771	17.2
1916	278,107	7,332	7,248	26.2	4,875	17.5	680	232	899	123	4,427	15.9
1917	278,107	6,548	6,495	23.4	4,646	16.7	718	246	732	113	4,174	15.0
1918	278,107	6,555	6,468	23.3	5,380	19.3	872	308	692	107	4,816	17.3
1919	275,099	6,793	6,674	23.3	5,358	19.5	737	234	806	120	4,855	17.6
1920	286,061	8,433	8,070	28.0	4,609	16.1	779	195	817	101	4,025	14.0
1921	278,400	7,720	7,284	26.2	4,602	16.5	817	142	699	96	3,927	14.1
1922	281,600	7,432	6,987	24.8	4,698	16.7	831	145	646	92	4,012	14.2
1923	283,800	6,961	6,367	22.4	4,298	15.1	789	150	623	98	3,659	12.9
1924	285,900	7,029	6,335	22.2	4,607	16.1	929	172	632	100	3,850	13.5
1925	286,300	7,031	6,215	21.6	4,732	16.5	989	165	550	88	3,908	13.6
1926	284,700	6,728	6,007	21.0	4,460	15.7	979	161	530	88	3,642	12.8
1927	288,500	6,215	5,395	18.7	4,468	15.5	1,058	178	474	88	3,588	12.4
1928	281,500	6,360	5,429	19.2	4,683	16.6	1,178	179	447	82	3,684	13.1
1929	283,400	6,120	5,126	18.1	5,040	17.8	1,313	172	438	85	3,899	13.8
1930	283,400	6,190	5,223	18.4	4,665	16.5	1,232	133	384	74	3,566	12.6

|| Calculated on a population of 282,200.

Corrected Death Rates in different Wards, 1930.

St. Nicholas'.	St. Thomas'.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints'.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.	City.
7.8	9.8	15.4	14.7	12.0	14.9	11.8	12.2	11.4	9.9	13.7	14.3	11.4	10.0	11.8	12.8	13.8	12.2	13.8	12.1

All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

CAUSES OF DEATH AT DIFFERENT PERIODS OF LIFE FOR 1930.

(REGISTRAR GENERAL'S RETURN.)

CAUSES OF DEATH.	Sex	All Ages	0-	1-	2-	5-	15-	25-	45-	65-	75-
All Causes.	M. F.	1865 1649	206 173	44 45	37 32	52 49	89 90	233 180	567 416	388 340	249 324
1—Enteric Fever.	M. F.	3 2	.. ..	.. ..	.. ..	.. ..	1 1	1 1	1..	....	....
2—Smallpox.	M. F.	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
3—Measles.	M. F.	9 5	3 ..	4 2	2 3	....	....	....	....	....	....
4—Scarlet Fever.	M. F.	3 1	.. ..	2 1	1..	....	....	....	....	....	....
5—Whooping Cough.	M. F.	13 16	7 6	4 1	2 7	.. 2	....	....	....	....	....
6—Diphtheria.	M. F.	3 1	.. ..	1 ..	.. 1	2..	....	....	....	....	....
7—Influenza	M. F.	16 20	.. ..	.. ..	2 2	.. ..	.. 1	4 1	8 8	2 5	.. 3
8—Encephalitis Lethargica.	M. F.	.. 3	.. ..	.. ..	.. ..	.. ..	.. 1	.. ..	.. 2	....	....
9—Meningococcal Meningitis.	M. F.	11 8	3 2	1 ..	2 2	2 2	1 ..	1 2	1..	....	....
10—Tuberculosis of Respiratory system	M. F.	176 123	1 ..	.. 1	.. ..	4 4	38 36	76 57	52 20	5 4	.. 1
11—Other Tuberculous Diseases.	M. F.	34 34	2 4	3 ..	2 3	9 11	10 9	5 2	3 3	.. 2	....
12—Cancer, Malignant Disease.	M. F.	197 197	.. ..	.. ..	.. 1	1 2	1 2	14 16	91 93	73 49	17 34
13—Rheumatic Fever.	M. F.	8 8	.. ..	.. ..	1 ..	1 2	2 1	3 1	1 4	....	....
14—Diabetes.	M. F.	22 24	.. ..	.. ..	.. ..	1 ..	1 1	1 ..	10 15	6 8	3 ..
15—Cerebral Hæmorrhage, etc.	M. F.	62 72	.. ..	.. ..	.. ..	.. ..	1 ..	2 2	26 26	20 24	13 20
16—Heart Disease.	M. F.	338 324	.. ..	.. ..	.. 1	5 2	4 5	22 25	121 91	110 105	76 95
17—Arterio-sclerosis.	M. F.	100 84	.. ..	.. ..	.. ..	.. ..	.. ..	1 ..	22 20	36 27	41 37
18—Bronchitis.	M. F.	96 79	14 12	3 1	.. ..	1 ..	1 1	12 3	20 10	21 23	24 29

Causes of Death at different periods of life
for 1930—*continued*.

CAUSES OF DEATH.	Sex	All Ages	0—	1—	2—	5—	15—	25—	45—	65—	75—
19—Pneumonia (all forms).	M. F.	149 112	32 31	15 22	14 7	2 8	3 2	28 7	34 18	18 8	3 9
20—Other Respiratory Diseases.	M. F.	21 14	1 ..	1 1	.. ..	.. ..	1 1	2 2	10 1	2 5	4 4
21—Ulcer of Stomach or Duodenum.	M. F.	27 7	.. ..	.. ..	.. ..	.. ..	.. 1	5 3	18 3	2 ..	2 ..
22—Diarrhoea.	M. F.	33 26	25 14	1 5	3 1	1 1	.. 1	.. 1	1 2	1 1	1 ..
23—Appendicitis and Typhlitis.	M. F.	10 8	.. ..	.. ..	.. ..	1 3	.. 1	4 2	.. 1	4 ..	1 1
24—Cirrhosis of Liver.	M. F.	5 2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	5 2	....	....
25—Acute and Chronic Nephritis.	M. F.	67 70	.. ..	.. ..	1 ..	1 2	.. 2	8 10	25 24	20 19	12 13
26—Puerperal Sepsis.	M. F.	.. 16	.. ..	.. ..	.. ..	.. ..	.. 4	.. 12	....	....	....
27—Other Accidents and Diseases of Pregnancy and Parturition.	M. F.	.. 11	.. ..	.. ..	.. ..	.. ..	.. 4	.. 7	....	....	....
28—Congenital Debility and Malformation, Premature Birth.	M. F.	73 76	71 73	1 1	.. ..	.. ..	.. 2	1..	....	....	....
29—Suicide.	M. F.	23 6	.. ..	.. ..	.. ..	.. ..	.. 2	6 2	12 1	4 1	1 ..
30—Other Deaths from Violence.	M. F.	68 35	4 ..	.. 3	2 2	8 1	12 2	13 3	17 8	10 7	2 9
31—Other Defined Diseases.	M. F.	296 264	43 31	8 7	5 2	13 9	13 10	24 21	88 63	53 52	49 69
32—Causes ill-defined or unknown.	M. F.	2 1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	1 1	1..	....

UNDER 1 YEAR.

Legitimate. Illegitimate.

(M.)	198	8
(F.)	161	12

HOSPITALS.

Name.	Purpose.	No. of Beds.	For Newcastle Cases.	For Cases from outside City.
MUNICIPAL.				
City Hospital for Infections Diseases	Infectious Diseases, Tuberculosis .	338	338	..
Smallpox and Isolation Hospitals	Smallpox and Isolation	172	172	..
Newcastle General Hospital	General, Medical, and Surgical	Men 252 Women 254 Children 160	} 666	..
Barrasford Sanatorium, Barrasford	Tuberculosis . . .	90		20
Newcastle Mental Hospital, Gosforth	Mental	1060	1060	..
Shotley Bridge Colony, Shotley Bridge	Mental Defec- tives	400	400	..
St. Mary Magdalene Hospital, Newcastle	Chronic Sick . . .	80	80	..
VOLUNTARY.				
Royal Victoria Infirmary, Newcastle	General, Medical and Surgical, Venereal Diseases, &c.	576	150	426
Fleming Memorial Hospital, Newcastle	Children	100	36	64
Princess Mary Maternity Hospital, Newcastle	Maternity	90	40	50
Eye Infirmary, Newcastle	Eyes	30	7	23
Throat, Nose and Ear Hospital, Newcastle	Throat, Nose and Ear	33	..	..
Hospital for Diseases of the Chest, Newcastle	Diseases of the Chest	Out patients	only.	
Catherine House, Newcastle	Maternity	19	..	..
Children's Hospital and Mothercraft Centre, Newcastle	Children	22	9	13
Stannington Sanatorium, Stannington	Tuberculosis (Children)	310	30	280
Dental Hospital, Newcastle	Dental	Out patients	only.	
Walker Accident Hospital	Shipyard Accidents	24	24	..

REPORT OF THE
MATERNITY AND CHILD WELFARE
MEDICAL OFFICER.

II.—THE CHILD.

INFANTILE MORTALITY, MATERNITY AND
CHILD WELFARE.

THE
LIBRARY OF THE
MUSEUM OF NATURAL HISTORY
AND
ZOOLOGY
OF THE
CITY OF BOSTON

1845

THE
LIBRARY OF THE
MUSEUM OF NATURAL HISTORY
AND
ZOOLOGY
OF THE
CITY OF BOSTON

INFANTILE MORTALITY.

SUMMARY OF BIRTHS AND DEATHS, 1930.

	LEGITIMATE.			ILLEGITIMATE.			Grand Total.
	M.	F.	Total.	M.	F.	Total.	
Total Births in the Year ..	3,009	2,892	5,901	148	141	289	6,190
Net „ „ „ ...	2,556	2,478	5,034	92	97	189	5,223
Net Deaths under 1 year ..	202	163	365	8	11	19	384
Death Rate per 1,000 births	79	65	72	87	113	101	74

BIRTHS (CORRECTED) IN WARDS IN THE DIFFERENT QUARTERS OF THE YEAR 1930.

WARD.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	TOTALS.
St. Nicholas'	14	7	4	6	31
St. Thomas'	34	28	33	38	133
St. John's	82	90	90	87	349
Stephenson	113	106	105	117	441
Armstrong	69	70	79	75	293
Elswick	40	48	53	51	192
Westgate	63	72	80	69	284
Arthur's Hill	25	19	11	24	79
Benwell	80	91	95	107	373
Fenham	75	100	122	117	414
All Saints'	71	83	84	70	307
St. Andrew's	51	51	42	61	205
Jesmond	11	25	14	18	68
Dene	51	64	43	40	198
Heaton	37	55	55	41	188
Byker	81	84	83	67	315
St. Lawrence	103	96	132	107	438
St. Anthony's	80	84	95	81	340
Walker	136	151	148	140	575
CITY	1,216	1,324	1,367	1,316	5,223

DISTRIBUTION OF DEATHS.

WARDS.	Net Deaths of Children under 1 year of age in 1930.					Children under 1 year of age— Death rate per 1,000 Births.	Birth Rate per 1,000 Popula- tion (cor- rected).
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Whole Year		
St. Nicholas' ..	..	1	..	..	1	64	11.4
St. Thomas' ..	..	4	..	2	6	45	9.7
St. John's	11	6	8	7	32	92	23.1
Stephenson ...	12	8	7	19	46	104	23.9
Armstrong ...	11	2	6	8	27	92	19.1
Elswick	5	1	4	1	11	57	15.3
Westgate	4	4	1	3	12	42	18.9
Arthur's Hill .	2	3	..	1	6	76	7.0
Benwell	6	3	6	7	22	59	20.5
Fenham	9	7	6	8	30	72	23.0
All Saints'	9	6	5	6	26	85	17.7
St. Andrew's .	6	2	3	4	15	73	17.7
Jesmond.....	..	..	1	1	2	29	6.2
Dene	4	..	1	2	7	35	12.5
Heaton	3	2	4	1	10	53	12.3
Byker	12	5	6	4	27	86	18.3
St. Lawrence .	10	2	5	9	26	59	24.9
St. Anthony's .	12	6	5	9	32	94	21.9
Walker	21	10	8	7	46	80	26.4
CITY.....	137	72	76	99	384	74	18.4

All births and deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 53 WEEKS ENDED 3RD JANUARY, 1931.

CAUSE OF DEATH.	AGE PERIODS.																			Deaths in Institutions in the City of "Residents" or "Non-Residents"	
	GROSS.										NETT (after allowing for transfers).										
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.		Total under 1 Year of Age.
, ENDEMIC AND INFECTIOUS DISEASES.																					
ough	..	..	..	..	..	2	2	3	..	3	..	..	..	..	..	2	2	3	..	3	1
al Fever	1	..	1	..	2	..	2	4	5	13	..	..	..	..	..	2	2	4	5	13	1
	..	..	..	..	..	..	2	1	3	6	1	..	..	..	1	..	1	1	2	4	4
	..	..	..	..	..	..	1	1	..	2	..	..	..	..	..	..	1	1	..	2	2
of the Respiratory System.....	..	..	..	..	..	..	..	1	2	3	..	..	..	..	..	..	..	..	1	1	1
of the Central Nervous System....	..	..	..	1	1	..	2	2	1	6	..	..	..	1	1	..	1	..	1	3	4
d Tuberculosis .....	..	..	..	..	..	..	2	..	..	2	..	..	..	..	..	..	2	..	..	2	2
L TUBERCULOSIS .....	..	..	..	1	1	..	4	3	3	11	..	..	..	1	1	..	3	..	2	6	7
oticæmia .....	..	..	..	1	1	2	..	..	..	3	..	..	..	..	1	1	..	..	..	1	3
	..	1	..	..	1	2	2	..	..	5	..	1	..	..	1	2	1	..	..	4	3
SEASES NOT INCLUDED ABOVE.																					
ening of Bones .....	..	..	..	..	..	..	1	1	..	2	..	..	..	..	..	..	1	1	..	2	1
he Thymus.....	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1
nia Lymphadenoma .....	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	1	..	..	1	1
orosis .....	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..
al Diseases	2	1	..	..	3	..	1	2	2	8	1	1	..	..	2	..	1	2	..	5	3
OF NERVOUS SYSTEM AND SENSE ORGANS.																					
	..	..	..	..	..	2	1	2	1	6	..	..	..	..	..	1	1	2	1	5	3
	..	..	..	1	1	..	..	..	..	1	..	..	1	1	1	..	..	..	..	1	..
avulsions	4	1	1	..	6	1	..	..	..	7	4	1	1	..	6	1	..	..	..	7	..
ase .....	..	..	..	..	..	..	2	..	2	4	..	..	..	..	..	..	1	..	1	2	3
OF RESPIRATORY SYSTEM.																					
	1	..	3	2	6	9	8	4	4	31	1	..	3	2	6	7	8	4	4	29	..
umonia.....	..	2	..	..	2	10	27	13	10	62	..	1	..	..	1	10	20	10	7	48	28
onia .....	..	..	1	..	1	2	..	3	1	7	..	..	1	..	1	2	..	3	1	7	3
type not stated).....	..	..	..	..	..	3	3	..	1	7	..	..	..	..	..	2	2	..	..	4	2
Carried forward.....	8	5	6	5	24	33	56	37	33	183	7	4	5	4	20	28	43	31	23	145	67

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 53 WEEKS ENDED 3RD JANUARY, 1931.

CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents."
	GROSS.										NETT (after allowing for transfers).										
	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	Total under 1 Year of Age.	
Brought forward	8	5	6	5	24	33	56	37	33	183	7	4	5	4	20	28	43	31	23	145	67
DISEASES OF DIGESTIVE SYSTEM.																					
Diseases of the Buccal Cavity and Annexa.....	..	1	..	1	2	..	..	..	..	2	..	..	..	1	1	..	..	..	..	1	1
Diseases of the Pharynx, Tonsillitis.....	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1
Other Diseases of the Stomach	1	..	1	..	2	4	1	1	..	8	1	..	1	..	2	4	1	1	..	8	1
Diarrhoea and Enteritis.....	2	..	1	1	4	11	27	12	6	60	2	..	1	..	3	7	18	7	6	41	31
Hernia, Intestinal Obstruction .....	..	..	..	1	1	4	4	..	3	12	..	..	..	..	..	3	..	..	1	4	9
Peritonitis .....	..	..	..	..	..	1	1	..	..	2	..	..	..	..	..	1	..	..	..	1	2
NON-VENEREAL DISEASES OF GENITO-URINARY SYSTEM AND ANNEXA.																					
Acute Nephritis	1	..	..	..	1	..	..	1	..	2	1	..	..	..	1	..	..	..	..	1	1
Diseases of the Kidney and Annexa .....	..	..	..	..	..	..	2	..	..	2	..	..	..	..	..	..	2	..	..	2	1
DISEASES OF SKIN AND CELLULAR TISSUE.																					
Phlegmon—Acute Abscess .....	..	1	..	..	1	1	2	..	..	4	..	1	..	..	1	..	1	..	..	2	1
Diseases of the Integumentary System.....	..	..	2	1	3	..	1	..	..	4	..	..	1	1	2	..	1	..	..	3	2
DISEASES OF BONES, &c.																					
Diseases of the Bones .....	..	..	..	..	..	1	1	..	..	2	..	..	..	..	..	..	..	..	..	..	1
Diseases of the Joints .....	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
MALFORMATIONS.																					
Congenital Malformations	16	5	1	3	25	13	10	3	..	51	8	4	..	2	14	5	2	2	..	23	22
DISEASES OF EARLY INFANCY.																					
Premature Birth	90	17	3	7	117	12	1	..	..	130	64	10	3	6	83	9	1	..	..	93	58
Congenital Debility and Sclerema	12	4	2	2	20	7	..	..	..	27	11	4	2	2	19	5	..	..	..	24	3
Icterus Neonatorum.....	3	2	..	..	5	1	..	..	..	6	1	2	..	..	3	1	..	..	..	4	3
Atelectasis	10	..	1	..	11	1	..	..	..	12	6	..	1	..	7	1	..	..	..	8	6
Diseases of Umbilicus	1	..	1	1	3	..	..	..	..	3	..	..	1	..	1	..	..	..	..	1	3
Injuries at Birth	22	3	1	..	26	..	..	..	..	26	14	1	..	..	15	..	..	..	..	15	15
Lack of Care	2	..	..	..	2	..	..	..	..	2	2	..	..	..	2	..	..	..	..	2	..
Other Diseases of Early Infancy.....	3	1	1	1	6	1	..	..	..	7	..	1	..	1	2	..	..	..	..	2	6
AFFECTIONS PRODUCED BY EXTERNAL CAUSES.																					
Burns (Conflagration excepted) .....	..	..	..	..	..	1	..	1	..	2	..	..	..	..	..	1	..	..	..	1	2
Accidental Mechanical Suffocation.....	..	1	..	..	1	1	1	..	..	3	..	1	..	..	1	1	1	..	..	3	..
TOTAL	171	40	20	23	254	93	108	55	42	552	117	28	15	17	177	66	70	41	30	384	237

ANALYSIS OF INFANTILE MORTALITY SINCE COMMENCEMENT OF ORGANISED MATERNITY AND CHILD WELFARE
WORK BY THE HEALTH DEPARTMENT.

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
Death-rate of Infants <i>under 1 year</i> per 1,000 births	177	139	166	155	138	153	126	139	122	123	137	101	122	137	133	123	113	107	120	101	96	92	98	100	88	88	88	82	85	74
Death-rate of Infants <i>under 3 months</i> per 1,000 births	83.8	74.8	84.9	82.6	71.6	75.6	68.6	76.6	64.8	66.9	71.5	60.3	67.7	70.7	68.2	66.2	58.7	58.6	64.1	62.1	61.0	57.1	54.4	59.0	53.4	52.9	55.6	50.8	52.5	46.7
Death-rate of Infants from <i>Premature Birth</i> , per 1,000 births	20.1	20.7	25.1	20.9	19.7	22.0	21.2	24.8	19.8	18.8	21.7	19.3	22.0	19.5	24.0	22.0	22.3	27.4	24.6	20.6	22.2	18.4	21.2	26.7	19.0	20.6	22.6	20.6	24.5	17.8
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Premature Birth</i> , plus all <i>Congenital Causes</i> *	40.8	51.7	62.1	60.6	52.1	61.5	43.0	44.6	42.3	42.6	43.9	48.0	57.4	51.1	56.6	51.0	46.0	45.3	51.5	43.1	39.0	34.8	41.5	45.5	38.6	38.6	38.6	35.4	38.8	33.7
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Diarrhœa</i> and all other <i>Digestive Diseases</i> †	45.7	12.8	26.9	21.8	22.4	35.2	12.7	24.8	13.5	16.7	25.1	7.8	16.6	25.3	20.1	14.3	14.8	11.9	14.7	14.9	16.0	9.1	11.5	9.6	11.6	13.1	9.3	13.4	15.0	11.3
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Infantile Atrophy</i> , <i>Debility</i> and <i>Marasmus</i>	15.8	19.8	30.8	29.2	24.4	31.4	11.1	10.6	14.6	13.5	22.7	21.4	25.6	23.0	25.0	22.4	17.7	13.0	18.0	16.9	13.0	9.4	11.5	9.5	10.3	7.7	6.5	4.4	3.7	4.6
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Measles</i> .....	..	..	..	..	..	5.35	2.60	0.60	3.64	2.26	4.95	3.61	2.28	4.65	6.90	2.50	2.46	0.77	3.89	0.99	2.88	0.29	4.87	1.10	1.9	1.7	0.6	2.2	3.7	0.5
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Whooping Cough</i> .....	..	..	..	..	..	3.42	7.30	5.73	4.30	5.05	7.35	2.78	5.50	5.20	5.17	4.10	3.70	6.65	0.60	3.1	3.7	1.6	5.3	1.9	4.2	3.8	1.3	3.9	1.4	2.5
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Respiratory Diseases</i> .....	..	..	..	..	..	20.8	24.6	27.0	24.4	25.2	26.4	20.4	22.2	30.6	24.9	28.0	27.0	20.9	27.6	26.9	18.7	32.0	23.6	27.9	22.7	18.1	27.1	16.6	16.4	16.8
Death-rate of Infants <i>under 1 year</i> per 1,000 births, from <i>Tuberculosis</i> (all forms) .....	..	..	..	..	..	3.53	3.71	4.65	4.55	4.25	2.40	3.20	3.88	3.88	3.40	2.60	1.54	2.63	1.80	1.36	1.51	1.29	2.2	1.6	0.6	2.0	2.4	1.3	1.0	1.1

For particulars of deaths, as to causes, etc., see Tables on pages 60A and 66A.

DEATHS OF CHILDREN UNDER SCHOOL AGE.

The mortality rate in 1930 among children, aged 1 to 5 years, was 7.4 per 1,000 of the total births occurring in the years 1926 to 1929 (inclusive). The corresponding figure for each of the previous five years was as follows:—19.9, 11.1; 1928, 9.9; 1927, 9.5; 1926, 11.1; 1925, 15.1.

Prior to 1911 figures uncorrected for cases belonging to other districts.

*“ *All Congenital Causes* ” includes Syphilis, Congenital Defects, and Diseases of Early Infancy.

†“ *Diarrhœa and all other Digestive Diseases* ” includes Diarrhœa, Dysentery, Epidemic or Zymotic Enteritis, Rickets, Diseases of the Stomach, Enteritis, Obstruction of Intestine, Peritonitis and other Diseases of the Digestive System.

Report of the Maternity and Child Welfare Medical Officer.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

General.

I have the honour to submit to you my eleventh annual report.

The outstanding facts which emerge from the report are all of a gratifying nature, and are as follows:—

1. There was a slight decrease in the maternal mortality rate in the City in 1930 (5·36, as compared with 5·85 in 1929).

2. The birth rate in the City rose in 1930, after steadily falling for some years.

3. The infant mortality rate was 74 per 1,000 births—a new low record rate for the City, and 11 per 1,000 births less than in the previous year.

4. The death rate among pre-school children was also the lowest on record, and shows a substantial decrease when compared with previous years.

5. There were fewer stillbirths, fewer premature births and fewer illegitimate births in the City in 1930 than in previous years.

6. There was a substantial increase in the attendances at the Centres, and especially of expectant mothers and pre-school children.

In Newcastle, therefore, the year 1930 must be regarded as a satisfactory one from a maternity and child welfare point of view.

The dental treatment of children attending the Centres was successfully arranged for during the year, and is commented upon on a following page. The provision of this treatment completes the arrangements in the City for treating practically every abnormal and pathological condition occurring in our infants and pre-school children, and there would appear to be no good reason why, as time goes on, and more and more children come under medical supervision in their early months and years, the majority should not enter school in a more or less sound physical condition. That is the ideal at which we are aiming, and which it is hoped some day to attain. In the meantime, we are working on material prejudicially affected at the outset by unemployment, poverty and unsuitable dwellings. It says a very great deal for the poor mothers in our City that they can bring their children up as well as they do, while living under the adverse conditions so many of them experience. All the same, it would be disastrous for large numbers of young children if the Centres were not available for the mothers to attend, and get advice and help in the rearing of their children. Without such advice it is certain that the artificial feeding of infants—already far too common—with all its attendant evils, would be the rule rather than, as it should be, the exception. While there is no index by which the matter can be satisfactorily gauged, I do not hesitate to express the opinion that the health of our Newcastle children is improving. We know that fewer of them are dying.

MATERNITY.

Five thousand two hundred and twenty-three live births occurred in the City during the year, and twenty-eight women died as a result of childbirth, a death rate of 5.36 per thousand births.

The following table gives the causes of these deaths, with a four year comparison :—

CAUSES.	1930	1929	1928	1927	1926
Abortions	1	1	2	..	4
Accidents of Pregnancy	2	2	2	3	1
Puerperal Hæmorrhage	3	4	3	2	3
Other Accidents of Child-birth ..	4	5	4	5	1
Puerperal Fever	14	11	9	4	5
Puerperal Albuminuria and Con- vulsions.....	2	6	4	4	4
Puerperal Phlegmasia.....	2	1	1	2	1
Puerperal Insanity .....	..	..	1	..	..
Puerperal Disease of Breast .....	..	..	1	..	..
	28	30	27	20	19

As will be seen from the above table, there is a slightly lower maternal mortality rate, and an increase in the number of maternal deaths from sepsis. The latter is a regrettable fact which calls for the strictest attention from all concerned. In investigating these deaths for purposes of the Maternal Mortality Committee, I have been impressed by the number of attendants who omit to use sterilised rubber gloves during the conduct of labours, and as I am strongly of the opinion that gloves form one of the surest barricades against the introduction of sepsis during and after childbirth, I suggest that the advisability of wearing them be brought to the notice of every practitioner and midwife in the City.

Ante-Natal Supervision.

One thousand six hundred and fifty expectant mothers attended the City Centres 4,844 times. Both

these figures are an increase on those for the previous year, and when to them is added the number of those seen and examined in the pre-maternity department of the Princess Mary Maternity Hospital, it is found that at these clinics alone 60·6 per cent. of the City's expectant mothers are receiving ante-natal care and advice. When the further addition of those being cared for by private practitioners and midwives is made, it will be seen that the overwhelming majority of pregnant women in the City are now under medical supervision during their ante-natal period. It is not proposed to leave the matter, however, till every expectant mother in the City is seen. Only thus can avoidable trouble for both mothers and children be prevented.

The following table shows the attendances at the ante- and post-natal clinics :—

CENTRE.	ANTE-NATAL.		POST-NATAL.	
	Attendance.	Individuals.	Attendance.	Individuals.
Benwell	721	269	91	30
Byker	1030	325	51	26
Diana Street	943	350	12	4
Portland Street	543	158	12	2
St. Peter's	224	82	3	2
Walker	660	247	5	1
Wharncliffe Street ..	723	189	17	8
	4,844	1,650	191	73

As time goes on it is hoped to extend the post-natal supervision, but whether this should be done at the City's clinics or elsewhere is a debatable point. Certainly every woman should be carefully examined for possible injuries after childbirth, and the proper person to examine her is the practitioner or midwife who was in attendance at the birth, and therefore responsible for its safe and satisfactory conclusion. Where post-partum treatment

is necessary, it is usually found to be of a hospital type, and the City clinics could only act as clearing houses for such cases. The following report was submitted to the Ministry of Health in reply to the Memorandum and Circular dated 11th December, 1930 :—

The provisions of the Ministry of Health Memorandum 156/M. & C.W., and Circular 1167, dated 11th December, 1930, have been considered by the Maternity and Child Welfare Committee and the Health Committee, and in accordance with the penultimate paragraph of the Circular the following report is submitted.

On reviewing the suggestions of the Memorandum it was felt by the Committees concerned that the Newcastle Maternity and Child Welfare Scheme had already provided in great part for the services advised, and that the further expansion of the services in a gradual way would meet the anticipated requirements of the City.

Detailed observations are submitted in respect of the various headings of the Memorandum :—

1. ANTE-NATAL SERVICES.

At the present moment seven municipal ante-natal centres are in existence, and additional facilities are provided at the ante-natal department of the Princess Mary Maternity Hospital for the needs of that portion of the population which utilises the services of the institution. Further, there is ample evidence that very largely as a result of the work of the municipal and hospital centres, there is a steadily increasing tendency for private practitioners and practising midwives to co-operate in the provision of ante-natal care for their patients.

The following table shows the increase in the known ante-natal services during the past two years, and the statistical material available for the current year indicates quite definitely that this expansion is still continuing :—

YEAR.	(1) Newcastle Mothers attending Municipal Ante-Natal Clinics.	(2) Newcastle Mothers attending Ante-natal Clinic at Princess Mary Maternity Hospital.	(3) Totals of Columns 1 and 2.	(4) Net Newcastle Births.	(5) Percentage of Mothers receiving Ante-Natal attention at Municipal or Hospital Clinics.
1929	1,348	1,491	2,839	5,126	55.4%
1930	1,723	1,445	3,168	5,223	60.6%

During the past two months the Ante-Natal Scheme for one area of the City has been modified so as to permit of the local general practitioners personally conducting these services at the municipal centre in respect of their own patients, and such other uninsured or unprovided women as may attend there. The work of the clinic, however, is still under the constant supervision of the Maternity and Child Welfare Medical Officer, and in addition the Consultant Specialist (MR. HARVEY EVERS, F.R.C.S.) attends once monthly to deal with cases which may have been specially referred to him. This innovation is being carefully studied with a view to its extension to other areas of the City should further experience prove this advisable.

2. SUPPLY OF MIDWIVES.

At the present moment there are 38 midwives in active practice in the City. Of recent years newcomers have found it exceedingly difficult to find suitable openings for successful practice. In fact, it would appear that saturation point has been reached in this respect. This is largely due to the fact that the Princess Mary Maternity Hospital provides a service both intern and extern, of which many mothers prefer to take advantage, or are compelled to do so for financial reasons.

In view of the considerable degree of overcrowding and poverty which prevails in the City, it is felt that in many instances "confinement" in hospital has advantages over "confinement" in the patient's own home; and that in consequence utilisation of the hospital facilities should be encouraged.

3. CONSULTANTS.

The services of consultants have been available since 1927 for all cases of puerperal fever and pyrexia, and, further, wherever a practitioner requires the services of a consultant in any of the complications which may occur in connection with labour or the puerperium, it has been, and will continue to be, the policy of the Health Committee to provide one.

4. HOSPITAL BEDS.

The requirements in this respect are met by the facilities offered at the Princess Mary Maternity Hospital, where 16 beds are perpetually at the disposal of the City. In actual practice 40 per cent. of the 90 beds of the hospital are continually occupied by Newcastle mothers. It is probable that in the near future considerable alterations will be effected at the Princess Mary Maternity Hospital, and though the proposal is at present little more than tentative, it is anticipated that this re-organisation will take the form of an entirely new department for septic cases at the Royal Victoria Infirmary.

5. PROVISION OF ANCILLARIES.

1. *Sterilised Outfits.*—The provision of sterilised maternity outfits for patients is already carried out in the City on a cost price basis. It is possible that any further extension of this supply by way of a free distribution of outfits would be attended by manifest disadvantages, in that it would be a means of keeping some women at home for their confinement who would be very much better off in hospital.

2. *Home Helps.*—Home Helps are provided by the Citizens' Service Society, and can be obtained on application.

3. *Supply of Milk for Expectant and Nursing Mothers.*—Dried milk is given gratis to expectant mothers during the last three months of pregnancy, where the financial position of the patient warrants it. In other cases milk is provided at cost price.

4. *Provision for Laboratory Facilities for the Examination of Pathological Material.*—These are already provided for by the City at the University of Durham College of Medicine Bacteriological Laboratory.

16th March, 1931.

WOMEN ATTENDING ANTE-NATAL CENTRES.

The following details refer to the confinements of 1,369 expectant mothers who attended the municipal ante-natal centres during 1930, and whose children were born during that year.

These mothers were sent to the ante-natal centres by :—

	<i>Cases.</i>	<i>Percentage.</i>
Doctors	119	9
Midwives	283	20
Health Visitors on Districts	122	9
Welfare Centres and Voluntarily	845	62
	<hr/> 1369 <hr/>	

The result of the subsequent confinements were :—

Type of Confinement.	Number of Cases.	Resulting in		
		Living Children.	Still-born Children.	Sets of Twins.
Normal	1089	1046	23	20
Instrumental	172	147	19	6
Cæsarian Section	9	9	..	..
Induction	12	10	2	..
Abortion	17	..	..	..
Not Pregnant.....	70	..	..	..
Total	1,369	1,212	44	26

Abnormalities were found in 63, or 5 per cent. of the cases, and the ultimate results were as follows :—

Abnormality.	No.	Normal Confinements.			Instrumental Confinements.			Cæsarian Sections.			Labour Induced.		
		No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.	No.	Living Children.	Still-born Children.
Breach Presentation	23	16	16	..	7	5	2	..	..	..	..	..	..
Twin Pregnancies ..	26	18	18	..	8	6	2	..	..	..	..	..	..
Deformed Pelvis ...	6	..	..	..	2	2	..	3	3	..	1	1	..
Albuminuria.....	5	5	4	1	..	..	..	..	..	..	..	..	..
Placenta Prævia. ..	3	1	1	..	2	1	1	..	..	..	..	..	..

6 mothers subsequently died : Septicæmia 2 ; Placenta Prævia 1 ; Eclampsia 1 ; Post Partum Hæmorrhage 1 ; Heart Disease 1.

MIDWIVES ACTS, 1902 and 1918.

During the year 38 midwives notified the Local Supervising Authority of their intention to practise in the City, and of these 35 held the examination certificate of the Central Midwives Board, and three were registered as having been in *bona fide* practice before the passing of the 1902 Act.

Inspections—202 visits were paid by the Superintendent of Midwives to the homes of certified midwives for the purpose of inspecting midwifery bags and appliances, and to see that the necessary records of their work were being satisfactorily kept, also to investigate cases of ophthalmia neonatorum, septicæmia, or other abnormalities occurring in their practices. In addition, 82 visits were paid to midwives' cases on account of some abnormal condition. The results of these inspections were generally satisfactory.

The disinfection of the clothing and appliances of midwives was carried out 27 times after their having been in contact with puerperal septicæmia or pyrexia.

Births attended by Midwives.—1,843 living births (an increase of 184 on the previous year) and 48 stillbirths (six more than in 1929) were attended by midwives during the year. Midwives attended 36·2 per cent. of the net births in the City, a higher percentage than in 1929. In addition midwives attended in the capacity of maternity nurses with doctors in 294 cases.

The closest co-operation and loyalty exists between the midwives practising in the City and the staff of the Health Department, and midwives are encouraged to send their cases to the ante-natal clinics. Much benefit was derived by those mothers who were sent, as

well as by the midwives concerned. The midwives carry out, according to the C.M.B. rules, ante-natal care of their patients, and keep the records of their visits very accurately.

The post graduate course of six lectures with practical demonstrations was again given this year by different doctors on subjects of special interest to the midwives and health visitors. These lectures were given at Diana Street Centre, and were highly appreciated and of the greatest value to those who attended.

Notices for medical help sent to Local Authority by the Midwives :—

FOR THE MOTHER.		<i>During Puerperium—</i>	
<i>During Pregnancy—</i>		Rise of Temperature.....	20
Ante Partum Hæmorrhage ...	20	Fits	2
Abortions	14	Undefined Illness of Mother ..	21
Illness	14	Varicose Veins	1
	<hr/>		<hr/>
	48	Total calls for mother	331
<i>During Labour—</i>		FOR CHILD.	
Uterine Inertia	96	Prematurity	28
Malpresentations	38	Discharging Eyes	24
Retained Placenta	4	Cyanosis	2
Post Partum Hæmorrhage ...	8	Congenital Defects	4
Ruptured Perineum	93	Convulsions	2
	<hr/>	Illness of Baby	16
	239	Still-births	6
		Rashes	9
			<hr/>
		Total calls for mother and child	422

In 23 per cent. of the midwives' cases the services of a doctor were requisitioned.

Claims from Doctors for Fees in respect of calls from Midwives :—

	Cases
For forceps delivery.....	131
For post partum hæmorrhage	15
For illness of mother	38
For illness of child	43
For premature birth	6
For discharging eyes	18
Other	77
Specialists called in.....	17
Total cases	<u>345</u>

As there was a total number of 422 calls for medical aid from the midwives, 81·7 per cent. of these calls were paid by the Local Supervising Authority.

Three claims for *payment of midwife's fee* were received.

Ophthalmia Neonatorum.

The number of cases notified was 103, of which 82 were City cases. 80 of these were visited, the remainder being cases occurring in hospital, or admitted to hospital from outside areas. This number is an increase of 19 on that for 1929. The confinements were attended by :—

Doctors	25
Midwives	19
Maternity Hospital	57
Cases resident outside the City sent into Newcastle General Hospital for treatment ...	2
	<u>103</u>

561 visits were paid to the 80 cases in the City, and the ultimate results were :—

Recovered completely	73
Unable to trace	1
Died	3
Slightly Defective	3
	<u>80</u>

The *ophthalmia incidence* per 1,000 births for the last ten years has been as follows :—

1921	13·0
1922	9·9
1923	11·0
1924	8·0
1925	8·0
1926	9·5
1927	10·7
1928	12·9
1929	14·0
1930	16·6

Puerperal Septicæmia and Puerperal Pyrexia.

191 cases were notified during the year—100 puerperal fever, and 91 pyrexia. 98 were from outside the City area and were admitted to hospitals in the City. Of the remaining 93, 92 were visited. The following table shows the attendance at birth :—

	<i>Puerperal Septicæmia.</i>	<i>Puerperal. Pyrexia.</i>
Doctors	5	15
Doctors and Midwives	8	12
Midwives	3	7
Princess Mary Maternity Hospital Staff.....	10	31
Newcastle General Hospital	1	..
Royal Victoria Infirmary	1	..
	—	—
	28	65
	—	—

VISITED CITY CASES TREATED IN HOSPITALS.

	<i>No.</i>	<i>Deaths.</i>
Puerperal Septicæmia	24	11
Puerperal Pyrexia	29	..

Nursing Homes Registration Act, 1927.

All the maternity and nursing homes in the City were re-inspected during the year. The standard of conduct generally was good, and only on rare occasions was it found necessary to make suggestions, and these were mostly concerning relatively unimportant details. The

essential requirements, such as sufficient air space and efficient sanitation, a trained staff numerous enough to meet all reasonable needs, scrupulous cleanliness, good book-keeping, and suitable appliances for dealing with fire, were found, without exception.

CHILDREN.

Births.—There were five thousand two hundred and twenty-three children born in the City in 1930, and of these 2,648 were boys and 2,575 girls—that is, there were 103 boys for every hundred girls. As usual, death claimed more boys than girls—79 per 1,000 of the former, compared with 67 per 1,000 of the latter, dying during their first year.

19 per cent. of the City's births occurred in institutions, as shown in the following table:—

Nursing Homes.....	48
Maternity Hospital (inside)	718
Gables	127
Newcastle General Hospital	96
	<hr/>
	989
	<hr/>

Illegitimate Births.—One hundred and eighty-nine illegitimate children were born—22 fewer than in the previous year. These died at the rate of 101 per 1,000 (compared with 72 per 1,000 legitimate births).

Birth Rate.—The birth rate for the year 1930 was 18·4 per 1,000 of the population. This is an increase on the previous year, and only the second increase to occur since 1920.

Deaths.—There were fewer infant deaths in 1930 than there were in the previous year.

As usual, the premature, multiple, and illegitimate births resulted in an excessive number of deaths as will be seen from the following table :—

	1926	1927	1928	1929	1930
Deaths of children during first week of life	169	154	157	145	117
Deaths of children during first month	226	222	205	207	177
Deaths from prematurity	124	122	112	126	93
Deaths of twins and triplets	55	41	36	49	29
Death-rate of illegitimate children (per 1,000 illegitimate births)	147	129	157	133	101

The Pre-School Child.—The children of pre-school age are still receiving the closest and most careful consideration, and, as will be seen from the following table, parents are responding to our interest and are bringing the children in larger numbers to the Centres yearly.

TODDLERS ATTENDING THE CENTRES.

YEAR.	NUMBER OF CHILDREN.
1925	1,992
1926	2,268
1927	2,542
1928	2,591
1929	2,779
1930	3,418

At most of the centres these children are now seen every week at a special session devoted entirely to them, and a big step forward in dealing with them has been the dental treatment provided.

Dental Treatment.

Arrangements were satisfactorily concluded during the year by which children attending the Centres can receive any required dental treatment. In arranging such treatment the difficulties to be overcome were mainly of an economic nature, and after careful consideration it was deemed best to come to an arrangement with the Education Authority to have our centre children—who are, of course, all of pre-school age—treated at special times at the four school dental clinics in the City for a *per capita* fee to be paid by the Maternity and Child Welfare Committee. Under this scheme mothers recommended by the centre Medical Officer can take their children to the nearest clinic and are thus saved the inconvenience and expense of travelling long distances from their homes. The scheme is working well, and it is a pleasure to express appreciation of the co-operation and willing help extended so readily to us by the Education Authority through the Director, Mr. Thomas Walling, and the Principal Medical Officer, Dr. George Foggin.

Play Centres.

The three play centres (or nursery schools, as they are usually termed) at Diana Street, Wharnccliffe Street and St. Peter's, continue to flourish, and are especially valued in wintry weather. The numbers attending are satisfactory, and once again public recognition is made of the kindness and self-sacrifice of the ladies who voluntarily conduct these centres.

Health Visitors—Training Course.

To carry out the extended Maternity and Child Welfare services in the City recommended to and approved by the City Council, it became necessary to employ additional Health Visitors, and advertisements

were accordingly published in the professional journals. Unfortunately the response was poor, and as there appeared to be no prospect of filling the vacancies by any other means, it was decided to institute a training course under municipal auspices in the City. A suitable scheme was drawn up and approved, and the first lecture was given in the College of Medicine on Saturday, 4th October, 1930. Fourteen suitable applicants were chosen for training—ten of whom, under the special circumstances prevailing, were accepted as subsidised pupils. These ten received a salary at the rate of £100 per annum, for which they undertook to do their six months' training, and to sit the examination at the end of that time, and thereafter to remain for six months as Health Visitors. Arrangements were made to provide expert instruction on all the subjects detailed in the official syllabus of the examining body—The Royal Sanitary Institute—and it was found that Newcastle was rich, in that there exist in the City excellent facilities for practically every description of specialised medical training. As this report is being written after the results of the examination are known, it may here be reported that thirteen out of our sixteen candidates (two of our existing Health Visitors also sat for the examination) were successful.

Staff Changes.

One Health Visitor, Miss J. Pottinger, resigned during the year. She was replaced by Miss N. Thompson. Miss M. C. Taylor (since resigned) and Miss C. P. Phillips were appointed as additional Health Visitors.

Welfare Centres.

Three new Centres were opened during the year in Walkergate, Heaton, and Fenham districts, in each of which large numbers of new houses have recently been built. These three bring the total number of Centres in the City up to fourteen.

The following table shows the geographical position of the Centres in the City, together with details of Centre days.

Centre.	Address.	Women and Children.	Medical Officer.	Health Visitor.	Ante-Natal Sessions.
Benwell	Y.W.C.A. Club, Buddle Road	Monday	Dr. Olga Adams	Miss Willson	Friday, 2 p.m. Mr. Harvey Evers.
Byker	Corner of Dalton Street and Shipley Street	Thursday	Dr. Gertrude Hickling	Miss Johnson ..	Friday, 2 p.m. Dr. Mabel Campbell.
City	Princess Mary Maternity Hospital, Jubilee Road	Tuesday	Dr. Isabella Lane ...	Miss Pritchard ..	Thursday, 2 p.m. Mr. Harvey Evers.
Diana Street, Westgate ...	25, Diana Street	Tuesday, 10 a.m. Friday	Dr. A. F. G. Spinks..	Miss Hastie	Wednesday, 10 a.m. Mr. Harvey Evers.
Elswick	Elswiek Wesleyan Church Hall, Malvern Street	Tuesday	Dr. Olga Adams	Miss Hatfield ..	Thursday, 2 p.m. Mr. Harvey Evers.
Scotswood	Denton Road	Friday	Dr. Glen Davison ...	Miss Carr	Tuesday, 2 p.m. Mr. Harvey Evers.
Shieldfield	St. Jude's Parish Hall, Dinsdale Road	Thursday	Dr. Isabella Lane	Miss Mason	Benwell (see above). Byker (see above).
Spital Tongues	Dunn's Cottages	Monday	Dr. A. F. G. Spinks..	Miss Simpson ..	Diana St. (see above) or Wharnccliffe Street (see below).
St. Peter's	Corner of Glasshouse Street ...	Tuesday (Afternoon only)	Dr. Mabel Campbell	Miss Hisco	Byker (see above).
Walker	Presbyterian Church Hall, Church Street	Wednesday ... Friday	Dr. C. N. Armstrong. Dr. Glen Davison ...	Miss Morton	Tuesday, 10 a.m. Mr. Harvey Evers.
Wharnccliffe Street, Scotswood Road	18, Wharnccliffe Street	Monday	Dr. A. G. Ogilvie	Miss Shell	Tuesday, 10 a.m. Dr. Mabel Campbell.
Fenham and Cowgate	Church Hall, Grange Road ...	Thursday	Dr. C. N. Armstrong. Dr. Mabel Campbell	Miss Worrall ...	Monday, 10 a.m. Mr. Harvey Evers.
Walkergate	St. Oswald's Mission Room, Walpole Street Walkergate	Friday	Dr. Gertrude Hickling	Miss Philipps ...	Tuesday, 10 a.m. (see Walker above).
Heaton	St. Gabriel's Parish Hall, Chillingham Road	Thursday	Dr. A. F. G. Spinks..	Miss Lewis	(See Byker above).

MONTH.	Ante-Natal Sessions.	Ante-Natal.		Post-Natal.		New Children.			Individuals.			Attendances.			Medical Sessions.	
		Attendances.	Individuals.	Attendances.	Individuals.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Number.	Average Attendance.
January	26	353	279	21	21	220	17	237	1211	1229	2440	2088	1831	3919	78	50.2
February	32	429	304	13	13	215	48	263	1305	1358	2663	2386	2093	4479	92	48.6
March	40	579	381	18	18	252	43	295	1325	1479	2804	3007	2632	5639	115	49.0
April	25	342	273	13	13	192	22	214	1177	1389	2566	2010	1971	3981	76	52.3
May	32	454	341	22	20	301	54	355	1368	1536	2904	2611	2425	5036	94	53.5
June	27	375	272	15	15	282	68	350	1412	1585	2997	2795	2675	5470	105	52.1
July	22	341	277	14	13	296	61	357	1439	1521	2960	2538	2146	4684	110	42.6
August	27	345	282	14	11	283	74	357	1556	1596	3152	3211	2608	5819	148	39.4
September	35	491	336	17	17	360	123	483	1785	1873	3658	4754	3767	8521	200	42.6
October	28	393	297	15	13	274	74	348	1729	1765	3494	3912	3005	6917	163	42.4
November	28	360	276	17	17	219	53	272	1669	1635	3304	3507	2805	6312	164	38.5
December	33	382	268	12	10	218	67	285	1538	1614	3152	3699	3150	6849	184	37.2
Total	355	4844	*1650	191	*73	3112	704	3816	*4358	*3418	*7776	36518	31108	67626	1529	44.2

* Number of actual individuals during year. The same persons attend during different months, so that these figures do not represent total of column.

CENTRE.	Ante-Natal Sessions.	Ante-Natal.		Post-Natal.		New Children.			Individuals.			Attendances.			Medical Sessions.		Individ- uals.	
		Attend- ances.	Individ- uals.	Attend- ances.	Individ- uals.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Number.	Average Attend'ce.	Boys.	Girls.
Benwell	48	721	269	91	30	304	45	349	470	303	773	3884	2527	6411	140	45.8	396	377
Byker.....	48	1030	325	51	26	321	51	372	471	379	850	3535	3612	7147	153	46.7	432	418
City Road.....	..	..	..	..	..	180	30	210	252	215	467	1921	2378	4299	97	44.3	238	229
Cowgate.....	..	..	..	..	..	125	46	171	133	106	239	1409	1082	2491	54	46.1	127	112
Diana Street	49	943	350	12	4	429	81	510	621	485	1106	5082	5466	10548	172	61.3	572	534
Elswick	47	543	188	12	2	329	84	413	478	397	875	4316	2900	7216	145	49.7	451	424
Heaton .....	..	..	..	..	..	101	72	173	113	88	201	1197	965	2162	54	40.0	91	110
Scotswood .....	..	..	..	..	..	125	30	155	174	170	344	1361	1492	2853	94	30.3	165	179
Shieldfield .....	..	..	..	..	..	236	51	287	349	276	625	3186	3098	6284	136	46.2	331	294
Spital Tongues .....	..	..	..	..	..	84	19	103	131	87	218	964	639	1603	47	34.1	115	103
St. Peter's.....	46	224	82	3	2	285	53	338	396	313	709	3029	2354	5383	143	37.6	366	343
Walker	70	660	247	5	1	293	58	351	416	341	757	3212	2470	5682	143	39.7	410	347
Walkergate.....	..	..	..	..	..	79	37	116	81	67	148	966	437	1403	54	26.0	73	75
Wharnclife St.	47	723	189	17	8	221	47	268	273	191	464	2456	1688	4144	97	42.7	226	238
Total.....	355	4844	1650	191	73	3112	704	3816	4358	3418	7776	36518	31108	67626	1529	44.2	3993	3783

SUMMARY OF CENTRE REPORT, 1930.

<i>Total Sessions, all Medical</i>	1,529	Average attendance at each	44·2
<i>Total Individuals</i>	7,776	Average visits per individual	8·7
<i>Total Ante-Natal Sessions</i>	355	Average attendance at each	14·2
<i>Total Ante-Natal and Post-Natal Individuals</i>	1,723	Average visits per individual	2·9
<i>Benwell Ante-Natal Sessions</i>	48	Average attendance, 16·0 ; average visits per individual	2·7
<i>Byker Ante-Natal Sessions</i>	48	Average attendance, 22·5 ; average visits per individual	3·0
<i>Diana St. Ante-Natal Sessions</i> ..	49	Average attendance, 19·5 ; average visits per individual	2·7
<i>Elswick Ante-Natal Sessions</i>	47	Average attendance, 11·8 ; average visits per individual	2·9
<i>St. Peter's Ante-Natal Sessions</i> ...	46	Average attendance, 4·9 ; average visits per individual	2·7
<i>Walker Ante-Natal Sessions</i>	70	Average attendance, 9·5 ; average visits per individual	2·7
<i>Wharncliffe St. Ante-Natal Sessions</i>	47	Average attendance, 15·7 ; average visits per individual	3·7
<i>Illegitimate Children Attending</i> ..	151		

Total Deaths (children attending centres) 124 (all ages).

Death Rate „ „ „ 15·9 per 1,000 (all ages).

Death Rate among all the Infants in the

City under 1 year 74 per 1,000 births.

Portland Street Centre.

As the above premises were not available for the extra day required, the tenancy was terminated in May, and suitable accommodation was procured in the Elswick Road Wesleyan Church Hall. These premises are situated near to the main road, and are in every way an improvement on conditions formerly prevailing. It is a pleasure to acknowledge the spirit of co-operation displayed by the minister and church authorities in placing willingly their premises at our disposal.

It will be noted from the following table that the number of individuals attending the Centres continues to increase yearly.

Attendances at Maternity and Child Welfare Centres.

CHILDREN.

YEAR.	No. of Attendances.	No. of Individuals.	Average Attendance per Individual.	Average Attendance at each Session.
1920 ...	22,596	3,751	6·0	44·2
1921 ...	32,538	4,734	6·8	40·7
1922 ...	36,020	4,835	7·4	44·9
1923 ...	42,515	5,153	8·2	46·5
1924 ...	45,766	5,587	8·2	45·5
1925 ...	45,476	5,744	7·9	43·6
1926 ...	50,697	6,467	7·8	46·2
1927 ...	46,672	6,522	7·1	42·4
1928 ...	53,960	6,532	8·3	49·3
1929 ...	52,460	6,574	7·9	48·2
1930 ...	67,626	7,776	8·7	44·2

Sewing and Knitting Classes.

The attendances at these are well maintained, and the facilities offered and instruction given are much appreciated.

SEWING AND KNITTING CLASSES, 1930.

CENTRE.	SUBJECT.	TEACHER.	DAY.	Attend- ance.	Sessions.	Average.
Benwell	Sewing and Knitting	Miss Crawford	Tuesday	362	47	7·7
Byker	Sewing and Knitting	Miss Whipp	Friday	524	48	10·9
City	Knitting	Miss Whipp	Wednesday.....	990	—	—
City	Sewing	Miss Robson.....	Thursday			
Diana Street	Sewing	Mrs. Churnside.....	Wednesday.....	1142	96	11·9
Diana Street	Knitting	Miss Whipp	Thursday			
Portland Street ...	Sewing and Knitting	Miss Robson.....	Tuesday	314	48	6·5
Scotswood	Sewing and Knitting	Miss Whipp	Tuesday	372	47	7·9
Shieldfield.....	Sewing	*Mrs. A. Holmes	Tuesday	259	43	6·0
Spital Tongues.....	Sewing	Miss Whipp	Monday.....	611	46	13·3
St. Peter's	Sewing	Miss Crawford	Wednesday.....	333	47	7·1
Walker	Knitting	Miss Crawford	Thursday	510	46	11·1
Wharnclife Street .	Sewing and Knitting	Miss Crawford	Friday	453	47	9·6

* Voluntary Worker.

Lectures.

Various lectures or papers relating to Maternity and Child Welfare were given during the year, and the Centres were used for this purpose. Among the most important were those given to medical students and students from the Kenton Lodge Training College. Subsequent to the latter lecture, the students were brought to the Centres in relays to see the practical work done. As all these students in both classes will at some future period come into close contact with young children, it is hoped that this experience will be of help to them.

Dried Milk.

The following table shews the quantity of dried milk distributed each month during the year :—

MONTH.	FREE.	AT COST PRICE.
	lbs.	lbs.
January	6,293	2,593
February	6,734	2,579
March	8,587	3,131
April	6,837	2,156
May	7,241	2,804
June	8,331	3,339
July	5,654	2,779
August	5,656	3,309
September	6,722	4,255
October	5,393	3,503
November.....	5,037	3,356
December	7,135	3,999
	79,620	37,803

Children attending Centres	7,776
Children given free milk	2,616
Percentage.....	33.6
Expectant mothers given milk	336
Free milk given to children (lbs.)	76,502
Free milk given to expectant mothers (lbs.)	3,118
Children receiving cost price milk	1,384
Percentage.....	17.8

Boarded-out Children.

The seven boarded-out children in the City—now the concern of the Maternity and Child Welfare Committee—were all carefully and regularly supervised during the year, and were reported on as being satisfactorily cared for.

NOTIFICATION OF BIRTHS ACTS.

Of the 6,190 births (gross) which were registered in the City in 1930, 5,285, or 85·3 per cent. were notified as follows :—

Notified by.	Gross Living Births.	Still-Births.
Medical Practitioners	419	.. 30
Medical Practitioners and Midwives ..	281	.. 13
Midwives	1843	.. 48
Maternity Hospital	2096	.. 215
Wingrove Hospital	88	.. 10
Gables Maternity Home	231	.. 7
Parents	4	.. ..
	<hr/> 4,962 <hr/>	<hr/> 323 <hr/>

Of the 4,962 living births notified, 902 were outside cases born in Newcastle, giving a net figure of 4,060.

Of the 323 still-births, 144 were outside cases. Net 179.

Still-Births.—Of the total net notifications of births received, still-births were in the following proportion :—

Year.	Percentage.	Year.	Percentage.
1922.....	2·9	1927.....	3·7
1923.....	2·9	1928.....	3·8
1924.....	2·6	1929.....	3·7
1925.....	2·8	1930.....	4·2
1926.....	3·1		

Still-births Registered Net	224
Still-births Notified Net	179
Percentage Notified Net	80
Still-births Visited Net	202

<i>Duration of Pregnancy.</i>	<i>No.</i>	<i>Percentage to Total.</i>
At or under 7 months	35	17·3
At 7-8 months	54	26·7
At full time	113	56·0

Suggested causes of the still-births :—

	<i>Cases.</i>
(a) Ill-health of the mother	30
(b) Fœtal deformities and malpresentations and uterine inertia	59
(c) Premature delivery, ante-partum hæmorrhage, etc...	32
(d) Other causes, including albuminuria.....	81

The following table shows the position in the family of the still-born child :—

	<i>Cases.</i>		<i>Cases.</i>
1st child	56	4th child	23
2nd child	40	5th child	8
3rd child	19	6th child	56

In 148 cases it was the first still-birth, in 41 the second, in 7 the third, and in 6 cases there were more than three previously still-born. 32 per cent. of the still births occurred in hospital. Nine of the mothers subsequently died.

Syphilis was returned as the cause of death in four children below the age of 1 year.

WORK OF HEALTH VISITORS.

18 Health Visitors, including the Chief Health Visitor, were engaged solely in Maternity and Child Welfare Work during 1930, and for the latter half of the year this number was increased by 2.

4,529 births were visited, and 19,263 re-visits were paid, an average of 5·2 visits per child. These give a total of 23,792 visits to children under 1 year.

SUMMARY OF VISITS.

	Primary.	Subsequent.	Total.
Births	4,529	19,263	23,792
Measles	1,627	992	2,619
Pneumonia	905	1,466	2,371
Diarrhœa	11	8	19
Children over One Year .....	....	....	31,397
Hospital Cases .....	....	....	390
Expectant Mothers .....	....	....	1,209
Special Visits.....	....	....	240
Visits to Boarded out or Nursed out Children .....	....	....	167
Unsuccessful Visits (Outs and Removals) .....	....	....	4,941
	....	....	67,145

The addresses of 144 children who left the City were sent to the Medical Officers of Health for the districts to which they had gone.

Infants on Visiting List.

Of 4,187 children born in the City in 1929, 3,826 completed their first year in 1930, and of the remainder:

361 died,
213 left the City,
197 could not be traced,
64 were visited only once.

The following figures are therefore based on the 3,826 who completed the first year, *plus* the 361 who died, making in all a total of 4,187, and of that total 2,246 or 53·6 per cent., attended the Welfare Centres.

Influence of Housing Conditions.—During the 23 years, 1908—1930, 88,122 births have been under the supervision of the Health Visitors, and of these 9,657 died. The following table shows the numbers of births and deaths in the various classes of house :—

YEAR.	HOUSES OF							
	1 Room.		2 Rooms.		3 Rooms.		4 Rooms or more.	
	Births	Deaths	Births	Deaths	Births	Deaths	Births	Deaths
1908.....	247	32	515	57	312	32	13	2
1909.....	339	53	694	86	168	32	29	3
1910.....	536	62	723	68	51	4	7	2
1911.....	462	68	794	79	77	6	20	1
1912.....	465	48	746	60	110	6	25	1
1913.....	241	40	348	28	91	3	17	3
1914.....	245	36	375	31	90	11	25	3
1915.....	631	104	2,140	306	1,416	144	692	74
1916.....	611	121	2,333	343	1,584	180	756	85
1917.....	730	104	2,199	284	1,349	150	776	84
1918.....	607	90	2,018	270	1,285	144	766	83
1919.....	664	111	2,056	306	1,358	188	810	102
1920.....	843	167	2,155	291	1,529	171	1,052	121
1921.....	1,263	140	2,523	234	1,651	134	1,036	88
1922.....	1,223	159	2,267	241	1,342	97	655	61
1923.....	1,357	149	2,187	243	1,155	86	637	54
1924.....	1,440	188	1,946	200	1,096	100	666	62
1925.....	1,395	151	1,803	192	1,001	89	654	50
1926.....	1,472	153	1,774	162	1,108	94	720	63
1927.....	1,334	132	1,772	168	988	62	721	68
1928.....	1,114	109	1,553	159	936	72	692	69
1929.....	1,064	101	1,526	138	1,002	87	737	61
1930.....	918	86	1,542	152	937	69	790	54
23 years ..	19,201	2,404	35,989	4,098	20,636	1,961	12,296	1,194
Death rate per 1,000 births		125·2		113·9		95·0		97·1

Walking and Talking.—Of the 3,826 children who completed their first year, 85 per cent. were walking at the end of the year, and 90·5 per cent. were talking at the end of the year.

Illnesses.—Among the children visited 136, or 3·2 per cent., contracted measles; 111, or 2·7 per cent., contracted whooping cough; 144, or 3·4 per cent., contracted diarrhœa; 538, or 12·8 per cent., contracted bronchitis or pneumonia.

The mortality per 1,000 births in 1930 was as follows :—

1 roomed dwellings	93·7
2 roomed dwellings	98·6
3 roomed dwellings	73·6
Dwellings over 3 rooms	68·4

Details as to the stated **Feeding** of the 4,187 children under supervision during the year are given in the following table :—

	FEEDING.					
	BREAST.		MIXED.		ARTIFICIAL.	
	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.
At First Visit	3,849	91·9	106	2·5	232	5·6
Deaths in First Year of above Children.....	290	7·5	15	14·1	56	24·1
At time of Death	230	6·0	12	11·3	119	51·3
Surviving Children (3,826) at 9 months	2,082	54·4	359	9·4	1,385	36·2

Details as to children who should have attained the age of 5 years during 1930 :—

Well and attending school	2,762
Well and not attending school	76
Ill and not attending school	79
Left City or failed to trace	1,197
Died in 2nd year	160
Died in 3rd year	38
Died in 4th year	15
Died in 5th year	13
Total surviving	2,917
Total deaths	226
Total left City.....	1,197
Total reported on	4,340

Voluntary Workers.

One or more voluntary workers are now attached to each Centre, and all have given most freely of their services throughout the year. Mrs. Roy Williamson—the President of the Voluntary Association—has kindly provided the following report :—

REPORT OF THE VOLUNTARY WORKERS AT THE CHILD WELFARE CENTRES FOR 1930.

There is little that is fresh to report about the work of the Voluntary Society in 1930. Voluntary workers have, as usual, attended at the sewing classes, organised jumble sales, run thrift clubs, and generally interested themselves in the welfare of the mothers who attend the Centres. Those who help with weighing and secretarial work at the medical sessions have continued to recommend needy cases to the Society for help with payments for artificial teeth, spectacles, surgical belts, etc., and mothers and babies have been sent for convalescence to the Rose Joicey Home at the Society's expense. The three Play Centres have continued to be well attended—the new one at Wharnccliffe Street, started by Miss Nancy Harper, being very popular. Treats were arranged at Christmas for the mothers, and the Christmas parties held in connection with the Play Centres were, as usual, large and happy gatherings.

A Sewing Party met once a week throughout the year at Framlington House to make clothes for desperately needy families recommended by Miss Cameron. Cast-off clothes were mended and repaired or cut down to make fresh garments, and new materials were made up. Gifts of outgrown children's clothes, boots, shoes, lengths of materials and hanks of knitting wool were gratefully received, and are always very much appreciated.

ELSA M. WILLIAMSON,

*President of the Newcastle upon Tyne
Mothers' and Children's Welfare Society.*

I am, Sir,

Your obedient servant,

A. F. G. SPINKS, M.D.,

Maternity and Child Welfare Medical Officer.

*Health Department,
Town Hall,*

*Newcastle upon Tyne,
8th June, 1931.*

INCLUDING REPORTS OF THE
RESIDENT MEDICAL OFFICER OF THE
INFECTIOUS DISEASES HOSPITAL
AND THE BACTERIOLOGIST.

III.—INFECTIOUS DISEASE.

FEVERS, FOOD POISONING,
CITY HOSPITALS FOR INFECTIOUS DISEASES,
DISINFECTION, BACTERIOLOGY.

INFECTIOUS DISEASES.

NUMBER OF CASES PER 1,000 POPULATION IN 1930.

DISTRICT.	ATTACK-RATE PER 1,000 POPULATION.						
	Small-pox.	Typhus	Scarlet Fever.	Diphtheria.	Enteric Fever and Continued Fever.	Puerperal Fever.	Erysipelas.
England and Wales	0.29	..	2.76	1.84	0.07	0.06	0.45
NEWCASTLE UPON TYNE ..	..	..	2.24	0.71	0.15	0.10	0.73
Hull .....	..	..	1.76	2.80	0.11	0.09	0.56
Leeds	0.09	..	4.98	2.08	0.01	0.11	0.88
Bradford	0.05	..	4.29	1.18	0.03	0.12	0.52
Sheffield.....	0.04	..	3.80	1.33	0.07	0.11	0.57
Manchester	0.00	..	4.78	1.08	0.04	0.22	0.66
Salford	0.03	..	2.88	3.12	0.16	0.05	0.67
Liverpool.....	0.00	0.00	3.32	4.57	0.07	0.05	0.82
Nottingham .....	..	..	3.52	2.61	0.04	0.08	0.51
Leicester	4.86	..	1.73	0.81	0.02	0.05	0.40
Stoke-on-Trent	1.36	..	0.79	0.90	0.07	0.11	0.59
Birmingham	0.00	..	2.44	1.73	0.06	0.12	0.58
Cardiff	0.04	..	2.38	3.25	0.05	0.19	0.47
Bristol	0.00	0.00	2.07	3.80	0.06	0.05	0.44
Portsmouth.....	..	..	2.84	2.50	0.16	0.06	0.31
†London	1.17	0.00	3.78	3.04	0.07	*4.22	0.54
Gateshead .....	..	..	3.10	0.99	0.03	0.03	0.75
South Shields	0.06	..	0.97	0.38	0.01	0.04	0.48
Tynemouth	0.00	0.00	2.08	2.09	0.17	0.08	0.55
Sunderland	0.00	0.00	1.33	1.48	0.09	0.08	0.93
Middlesbrough .....	..	..	3.35	0.78	0.03	0.14	0.85
†Northumberland .....	..	..	1.40	0.64	0.13	0.02	0.66
†Durham	0.04	..	2.37	1.31	0.07	0.06	0.68

† Administrative County. * Per 1,000 births.

DEATHS (CORRECTED) FROM NOTIFIABLE INFECTIOUS DISEASES
AND NON-NOTIFIABLE ZYMOTIC DISEASES, EXCLUSIVE OF TUBERCULOSIS.

WARD.	Diphtheria.	Erysipelas.	Scarlet Fever.	Enteric Fever.	Pneumonia.	Cerebro-spinal Fever.	Encephalitis Lethargica.	Measles and Rubella.	Puerperal Fever.	Small-pox.	Whooping Cough.	Diarrhoea (under 2 years of age).	Dysentery.
St. Nicholas'	2	..	..	..	..	..	..	..	..
St. Thomas'	..	1	1	..	12	..	..	1	..	..	3	..	..
St. John's	1	18	2	..	1	..	..	3	4	..
Stephenson	2	1	..	..	22	3	..	2	..	..	3	6	1
Armstrong	..	1	..	..	12	..	..	..	2	..	..	5	1
Elswick	5	..	..	..	..	..	1	..	..
Westgate	13	2	..	2	..	..	1	1	1
Arthur's Hill	..	1	..	1	9	..	1	..	..	..	..	..	..
Benwell	..	1	1	..	16	..	..	1	..	..	..	6	..
Fenham	1	..	..	..	9	..	..	2	2	..	2	2	..
All Saints'	..	1	..	..	15	1	..	..	1	..	2	..	..
St. Andrew's	..	1	..	3	16	1	..	6	..	..	..	3	1
Jesmond	7	..	..	..	..	..	..	..	..
Dene	4	..	..	..	..	..	..	1	..
Heaton	1	..	7	..	2	1	1	..	1	..	..
Byker	21	1	..	..	..	..	2	3	..
St. Lawrence	..	1	1	..	19	2	..	..	2	..	4	7	..
St. Anthony's	..	2	..	..	24	1	1	..	1	..	2	3	..
Walker	1	2	..	..	27	6	..	1	1	..	5	9	1
CITY	4	12	4	5	258	19	4	17	14	..	29	50	5

Note :—All deaths in Public Institutions have been allotted to the Wards to which they properly belong.

For particulars of deaths from **TUBERCULOSIS** see Section IV.

NOTIFIED CASES OF INFECTIOUS DISEASE AND DEATHS (GROSS).

EXCLUSIVE OF TUBERCULOSIS.

AGES OF CASES OF INFECTIOUS DISEASE NOTIFIED AND DEATHS REGISTERED DURING THE YEAR 1930.

NOTIFIABLE DISEASE.	AT AGES—YEARS.												GROSS TOTAL		NET TOTAL.		Cases admitted to Hospital.			
	Under 1.		1 to 5		5 to 15.		15 to 25.		25 to 45.		45 to 65.		65 and up-wards.		Ages not known.					
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.				
Diphtheria (including Mem- branous Croup)	5	..	52	3	124	3	27	..	15	..	1	..	..	224	6	274	16	200	4	219
Erysipelas	10	2	12	..	11	..	21	..	69	..	88	..	..	247	17	238	14	208	12	107
Scarlet Fever	5	..	148	4	381	..	65	..	40	..	6	..	..	645	4	588	4	634	4	619
Enteric Fever . . . . .	..	..	9	..	29	1	11	..	6	..	2	..	..	58	6	36	10	43	5	56
Cerebro-Spinal Fever	6	6	6	6	10	5	4	2	6	4	2	..	..	34	25	22	19	25	19	18
Acute Poliomyelitis . . . . .	..	..	8	..	1	..	..	..	1	..	..	..	..	10	..	13	3	8	..	6
Acute Polio-Encephalitis . .	..	..	1	..	..	..	1	..	..	..	..	..	..	2	1	1	..	1	1	2
Encephalitis Lethargica . .	..	..	..	..	1	..	..	3	..	..	2	..	..	3	7	18	11	3	4	3
Puerperal Fever . . . . .	..	..	..	..	..	..	47	13	47	31	..	..	..	100	44	58	43	28	14	24
Puerperal Pyrexia . . . . .	..	..	..	..	..	..	39	..	49	..	..	..	..	91	..	55	..	65	..	29
Ophthalmia Neonatorum . .	103	..	..	..	..	..	..	..	..	..	..	..	..	103	..	84	..	82	..	35
Pneumonia	106	76	360	62	183	13	82	10	156	49	124	64	46	1057	316	1473	384	987	258	137
Malaria . . . . .	..	..	..	..	..	..	..	..	2	..	..	..	1	4	..	6	1	2	..	..
Dysentery	6	2	47	2	25	..	4	..	3	..	..	..	2	87	5	110	3	82	5	82
Smallpox . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21	..	..	..	..
†Measles and Rubella	104	3	784	17	972	..	78	..	21	..	3	..	1	1967	20	3872	77	1954	17	79
°Chickenpox	77	..	437	..	1005	..	26	..	10	..	..	..	1	1556	..	1149	..	1554	..	22
	422	89	1864	94	2742	22	405	33	425	88	228	77	85	6188	451	8018	585	5876	343	1438

* Cases from outside the City excluded for the purpose of calculating Net Death Rates.
† Ministry of Health Regulations, 1920.
° Temporarily notifiable.

WARD DISTRIBUTION OF INFECTIOUS DISEASES (NET).

WARD.	Diphtheria.	Erysipelas.	Enteric Fever.	Scarlet Fever.	Cerebro-Spinal Fever.	Polio-myelitis.	Acute Polio-Encephalitis.	Encephalitis Lethargica.	Measles.	Rubella.	Puerperal Fever.	Puerperal Pyrexia.	Ophthalmia Neonatorum.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Smallpox.	Chickenpox.	Malaria.	Dysentery,	TOTAL.
St. Nicholas'	..	..	..	5	..	..	..	..	10	..	..	..	..	5	1	..	3	..	..	24
*St. Thomas'	24	8	5	24	2	1	..	..	63	51	3	2	2	39	..	73	..	..	..	297
St. John's	3	6	2	19	5	..	..	..	142	8	2	7	11	74	3	44	..	..	3	329
Stephenson	15	20	8	49	2	4	..	..	80	8	1	3	10	82	9	50	6	..	6	347
Armstrong	10	15	1	37	..	..	..	..	39	5	1	4	12	53	14	108	10	..	10	309
Elswick	10	4	..	23	..	1	..	..	63	17	..	2	1	34	1	31	5	..	5	192
Westgate	8	7	..	29	3	..	..	..	139	14	1	1	4	45	..	70	1	..	1	322
†Arthur's Hill	7	25	3	17	1	..	1	..	46	14	1	3	1	20	..	42	12	1	12	194
Benwell	17	12	6	44	1	2	..	..	178	18	3	3	5	58	13	203	4	..	4	567
Fenham	32	16	3	74	..	..	..	..	300	60	6	6	5	47	2	141	1	..	1	693
All Saints'	9	28	3	21	2	..	..	..	152	4	1	4	1	92	..	19	1	..	1	337
St. Andrew's	5	9	2	26	1	..	..	..	142	10	..	6	6	39	2	11	2	..	2	261
Jesmond	3	3	..	14	..	..	..	1	17	58	..	..	..	9	..	65	..	..	..	170
Dene	4	6	4	38	..	..	..	..	28	18	..	1	1	26	2	28	..	..	..	156
Heaton	4	4	1	23	..	..	..	..	50	4	1	2	2	20	..	22	..	1	..	133
Byker	11	6	..	31	2	..	..	2	62	2	3	4	6	60	..	67	5	1	5	262
St. Lawrence	6	8	3	52	..	..	..	..	42	1	2	4	6	61	1	98	1	..	1	285
St. Anthony's	11	9	..	37	1	..	..	..	30	1	1	3	4	77	..	80	1	..	1	255
†Walker	21	22	2	71	5	..	..	..	60	18	2	10	5	97	1	399	30	..	30	743
City	200	208	43	634	25	8	1	3	1643	311	28	65	82	938	49	1554	..	2	82	5,876

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children.

† Elswick Grange and Newcastle General Hospital.

‡ City Hospital for Infectious Diseases, Walker Gate.

For particulars of cases of TUBERCULOSIS, see Section IV.

WARD INCIDENCE OF INFECTIOUS DISEASES (NET).

EXCLUSIVE OF TUBERCULOSIS.

NOTIFIABLE DISEASES—Cases per 1,000 Population.																			DEATHS per 1,000 Pop.		
WARD.	Diphtheria	Erysipelas.	Scarlet Fever.	Enteric Fever.	Cerebro-Spinal Fever.	Poliomyelitis.	Acute Polio- encephalitis.	Encephalitis Lethargica.	Measles (including Rubella).	Puerperal Fever.	Puerperal Pyrexia.	Smallpox.	Chickenpox.	Ophthalmia Neonatorum.	Pneumonia.	Malaria.	Dysentery.	Measles. (including Rubella).	Whooping Cough.	Diarrhoea (under 2 years of age).	
St. Nicholas' ..	..	..	1.85	..	..	..	..	..	3.7	..	..	..	1.11	..	2.22	..	..	..	..	..
*St. Thomas' ..	1.75	0.59	1.75	0.29	0.15	0.07	..	..	8.3	0.22	0.15	..	5.35	0.15	2.86	..	..	0.07	0.22	..
St. John's	0.20	0.39	1.26	0.13	0.33	..	..	..	9.9	..	0.46	..	2.91	0.73	4.97	..	..	0.07	0.20	0.26
Stephenson ..	0.81	1.09	2.66	0.43	0.11	0.22	..	..	4.8	0.05	0.16	..	2.71	0.54	4.94	..	0.32	0.11	0.16	0.32
Armstrong	0.65	0.98	2.41	0.06	..	..	..	..	2.9	0.06	0.26	..	7.04	0.78	4.36	..	0.65	..	..	0.32
Elswick	0.80	0.32	1.83	..	..	0.08	..	..	6.4	..	0.16	..	2.47	0.08	2.71	..	0.40	..	0.08	..
Westgate	0.53	0.46	1.93	..	0.20	..	..	..	10.2	0.07	0.07	..	4.66	0.27	3.00	..	0.07	0.13	0.07	0.07
†Arthur's Hill ..	0.62	2.22	1.51	0.26	0.09	..	0.09	..	5.3	0.09	0.26	..	3.73	0.09	1.78	0.09	1.06	..	..	..
Benwell	0.93	0.66	2.41	0.33	0.05	0.11	..	..	10.7	0.16	0.16	..	11.14	0.27	3.89	..	0.22	0.05	..	0.33
Fenham	1.77	0.89	4.10	0.17	..	..	..	..	20.0	0.33	0.33	..	7.82	0.28	2.72	..	0.06	0.11	0.11	0.11
All Saints'	0.52	1.61	1.21	0.17	0.12	..	..	..	9.0	0.06	0.23	..	1.09	0.06	5.29	..	0.06	..	0.12	..
St. Andrew's ..	0.43	0.77	2.24	0.17	0.09	..	..	..	13.0	..	0.51	..	0.94	0.51	3.52	..	0.17	0.51	..	0.26
Jesmond	0.27	0.27	1.27	..	..	..	..	0.09	6.8	..	..	..	5.91	..	0.82	..	..	..	..	..
Dene	0.25	0.38	2.40	0.25	..	..	..	..	2.9	..	0.06	..	1.76	0.06	1.76	..	..	..	..	0.06
Heaton	0.26	0.26	1.50	0.07	..	..	..	..	3.5	0.07	0.13	..	1.44	0.13	1.31	..	..	0.07	0.07	..
Byker	0.64	0.35	1.81	..	0.12	..	..	0.12	3.7	0.17	0.23	..	3.90	0.35	3.49	0.06	0.29	..	0.12	0.17
St. Lawrence ..	0.34	0.45	2.95	0.17	..	..	..	..	2.4	0.11	0.23	..	5.57	0.34	3.52	..	0.06	..	0.23	0.40
St. Anthony's ..	0.71	0.58	2.39	..	0.06	..	..	..	2.0	0.06	0.19	..	5.16	0.26	4.97	..	0.06	..	0.13	0.19
†Walker	0.96	1.01	3.26	0.09	0.23	..	..	..	3.6	0.09	0.46	..	18.34	0.23	4.50	..	1.38	0.05	0.23	0.41
CITY	0.71	0.73	2.24	0.15	0.09	0.03	0.003	0.01	6.9	0.10	0.23	..	5.48	0.29	5.48	0.007	0.29	0.06	0.10	0.18	

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children. † Includes Elswick Grange and Newcastle General Hospital.

‡ Includes City Hospital for Infectious Diseases, Walker Gate.

For Particulars of **TUBERCULOSIS**, see Section IV.

HOUSEHOLDS AFFECTED WITH INFECTIOUS DISEASES,
EXCLUSIVE OF TUBERCULOSIS, MEASLES AND CHICKENPOX.

DISEASES.	HOUSEHOLDS WITH						Mili- tary or Naval Cases	Insti- tutions *	TOTAL CASES. (Gross).	Cases from outside of City.	NET CASES.
	Single Cases	2 Cases each	3 Cases each	4 Cases each	5 Cases each	6 Cases and over					
Diphtheria (including Mem- branous Croup)	141	13	4	..	..	..	5	40	224	24	200
Erysipelas	165	4	..	..	..	..	..	74	247	39	208
Scarlet Fever	486	48	12	..	1	..	..	22	645	11	634
Enteric (or Typhoid Fever) ..	26	5	..	1	..	..	..	17	57	14	43
Cerebro-Spinal Fever	24	..	..	..	..	..	..	10	34	9	25
Poliomyelitis	8	..	..	..	..	..	..	2	10	2	8
Polio-Encephalitis .....	..	..	..	..	..	..	..	2	2	1	1
Encephalitis Lethargica	3	..	..	..	..	..	..	..	3	..	3
Puerperal Fever	29	..	..	..	..	..	..	71	100	72	28
Puerperal Pyrexia	65	..	..	..	..	..	..	26	91	26	65
Ophthalmia Neonatorum	81	..	..	..	..	..	..	22	103	21	82
Pneumonia	909	25	3	..	..	..	3	86	1057	70	987
Smallpox .....	..	..	..	..	..	..	..	..	..	..	..
Malaria	1	..	..	..	..	..	1	2	4	2	2
Dysentery	42	6	1	..	1	..	..	25	87	5	82
TOTAL	1980	101	20	1	2	..	9	399	2664	296	2368

* See next page.

Schools and Infectious Disease.—It was not found necessary to close any school on account of infectious disease during the year.

PUBLIC INSTITUTIONS AND INFECTIOUS DISEASE.

The following notifications were received during the year :—

INSTITUTIONS, &c.	Diphtheria.	Erysipelas.	Scarlet Fever.	Encephalitis Lethargica.	Measles and Rubella.	Puerperal Fever.	Puerperal Pyrexia.	Pneumonia.	Chickenpox.	Ophthalmia Neonatorum.	Enteric Fever.	Poliomylitis.	Polio- Encephalitis.	Cerebro-Spinal Fever.	Smallpox.	Malaria.	Dysentery.	TOTAL. *
Royal Victoria Infirmary . . .	..	32	2	..	3	6	..	62	1	..	15	2	..	8	..	1	2	134
Fleming Memorial Hospital..	26	4	12	..	7	..	..	3	4	..	1	..	1	2	..	..	5	65
Newcastle General Hospital..	2	22	2	..	10	1	..	12	11	1	1	..	1	..	..	1	17	81
City Hospital for Infectious Diseases .....	..	..	†2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	4
Deaf and Dumb Institution ..	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
Maternity Hospital .....	..	4	..	..	..	64	26	1	..	..	..	..	..	..	..	..	..	95
Military Barracks	5	..	..	..	1	..	..	3	5	..	..	..	..	..	..	1	..	15
Northern Counties Orphanage	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	2
Diocesan Maternity Home...	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Eye Infirmary .....	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Nursing Homes .....	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
P.C.H.A. Shelter .....	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Throat Nose and Ear Hospital	3	4	..	..	4	..	..	..	1	..	..	..	..	..	..	..	..	12
Common Lodging Houses ...	..	4	..	..	1	..	..	5	..	..	..	..	..	..	..	..	..	10
Royal Victoria School for the Blind .....	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Babies' Hospital West	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Parade	2	..	2	..	..	..	..	2	..	..	..	..	..	..	..	..	1	7
Convent de la Sagesse .....	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	2
Leazes Terrace Hostel	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Salvation Army Hostel .....	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
TOTAL	45	74	22	..	31	71	26	89	24	1	17	2	2	10	..	3	25	442

* Does not include any cases belonging to the City which could properly be assigned to their homes.

† One patient in the Tuberculosis Ward who developed Scarlet Fever, and one Nurse who contracted the disease in the same Ward.

MILK SUPPLY IN RELATION TO INFECTIOUS DISEASES.

The source of the milk supply was ascertained in every case of scarlet fever and diphtheria, but in no instance was the infection attributable to milk. An outbreak of enteric fever, however, was traced to one milk supply. This is dealt with under the head of enteric fever.

12 cases of scarlet fever and 3 cases of diphtheria occurred at premises of various kinds, in connection with which business was carried on.

SCARLET FEVER.

Notifications of 634 cases were received during the year, and there were 4 deaths, equivalent to a mortality of 0·6 per cent.

DIPHTHERIA.

200 cases were notified during the year, and 4 died, a case mortality of 2·0 per cent. (the lowest on record), as compared with 5·4 in 1929.

Antitoxin was distributed free to medical practitioners in the City as follows :—

Number of medical practitioners who made application for antitoxin	39
Number of phials of antitoxin supplied	185
Number of cases of diphtheria notified	200
Number of notified cases removed to Hospital	195
Number of Hospital cases in which antitoxin was injected prior to admission	47

The fatality of the disease in recent years is shown in the subjoined table :—

Year.	DIPHTHERIA CASES. (All Forms.)	
	Number.	Case Mortality (per cent.).
1909	456	12·7
*1910	443	9·0
1911	507	7·5
1912	501	6·6
1913	368	7·6
1914	362	7·7
1915	275	9·5
1916	272	10·3
1917	226	14·6
1918	250	9·2
1919	320	6·9
1920	348	6·9
1921	353	6·2
1922	254	5·9
1923	200	5·0
1924	256	6·6
1925	187	3·7
1926	202	8·4
1927	225	7·1
1928	262	3·1
1929	259	5·4
1930	200	2·0

* Antitoxin first distributed gratis April, 1910.

Particulars of the type of the disease as noted in cases sent to hospital will be found later in the section dealing with the City Hospitals.

MEASLES AND RUBELLA.

1,954 cases (including 311 of rubella) were notified, and there were 17 deaths (corrected) in 1930, representing a death rate of 0·06 per 1,000 population, as compared with 0·26 in 1929, and a case mortality of 0·87 per cent. of notified cases (net).

DEATHS, 1930 (CORRECTED).

MONTH.	YEARS OF AGE.							Total.
	0-1.	1-2.	2-3.	3-4.	4-5.	5-10.	Over 10.	
January .....	..	..	..	..	..	..	..	..
February ...	..	..	..	..	..	..	..	..
March .....	..	..	..	..	..	..	..	..
April .....	..	..	..	..	..	..	..	..
May .....	..	..	..	..	..	..	..	..
June .....	..	1	..	..	..	..	..	1
July .....	..	1	..	..	..	..	..	1
August .....	..	..	..	..	..	..	..	..
September ..	..	..	..	..	..	..	..	..
October .....	..	..	..	..	..	..	..	..
November...	1	1	2	1	..	..	..	5
December ..	2	6	..	..	2	..	..	10
TOTAL ...	3	9	2	1	2	..	..	17

The following table shows the deaths in the various wards, and at different age periods :—

WARD.	Under 3 months.	3 and under 6 months.	6 and under 9 months.	9 and under 12 months.	1 and under 2 years.	2 and under 3 years.	3 and under 4 years.	4 and under 5 years.	5 and under 10 years.	Over 10 years.	TOTALS.
St. Nicholas'
St. Thomas'	1	..	..	..	1
St. John's.....	1	..	..	..	..	..	1
Stephenson	1	1	..	..	..	..	2
Armstrong
Elswick.....
Westgate	1	..	1	..	..	..	..	..	2
Arthur's Hill
Benwell	1	..	..	..	..	..	1
Fenham	1	..	1	..	..	..	..	..	2
All Saints'
St Andrew's	1	..	2	1	..	2	..	..	6
Jesmond
Dene
Heaton	1	..	..	..	..	..	1
Byker
St. Lawrence
St. Anthony's
Walker	1	..	..	..	..	..	1
TOTAL	3	..	9	2	1	2	..	..	17

Each Health Visitor visited and revisited selected cases occurring in her district. By this arrangement each case is seen immediately on receipt of the notification, and advice is given regarding the nursing and isolation

of the patient. The cases are kept under supervision until they recover, and should subsequent cases occur in the family they are recorded.

Measles Cases, including Rubella, notified during 1930.

Cases notified by Medical Practitioners	1,746
Cases found by Health Visitors	199
Cases notified by Parents	20
Cases found from Returns of Deaths	2
	<hr/>
	1,967 gross.
	1,954 net.
	<hr/>

Of the total number of measles cases notified, 1,627, in 1,367 households (or 82·7 per cent.) were visited by the Health Visitors, and 992 revisits were paid, a total of 2,619 visits.

The following particulars refer to the cases visited :—

	DWELLINGS OF					Total houses visited.
	1 room.	2 rooms.	3 rooms.	4 rooms.	More than 4 rooms.	
Families	192	382	368	336	89	1,367
Children	455	1,112	948	828	185	3,528
Cases	234	464	438	395	*96	1,627
Percentage of Cases to						
Children	51·4	41·7	46·2	47·7	51·9	46·1
Cases developing Pneumonia	13	12	11	12	2	50
Percentage of cases develop- ing Pneumonia	5·5	2·6	2·5	3·0	2·0	3·1
Deaths from Measles	4	5	3	4	..	16
Cases notified as Measles, Death certified as due to Pneumonia, Bronchitis or Diarrhœa	1	1	2	..	..	4
Case Mortality per cent. ...	2·1	1·3	1·1	1·0	..	1·2

* Total unvisited cases 340, including 309 in better-class houses, in which no death occurred, and 31 in institutions, with one death.

Medical Attendance.—In 95·0 per cent. of the cases visited a doctor was in attendance.

Condition of Patient.—In 84·6 per cent. of the cases visited the disease ran a normal course, but bronchitis, pneumonia or other complications developed in the remainder.

Attendance at Schools.—761, or 46·8 per cent. of the affected children visited had previously attended school, and 866, or 53·2 per cent. had never attended school. In connection with 527 of the latter cases, however, other children in the infected houses were scholars, equivalent to 32·4 per cent. of the total cases.

The following were the ages of children (visited) suffering from measles :—

Under 1 year	97
1-2 years	156
2-3 years	169
3-4 years	176
4-5 years	220
5-6 years	342
Over 6 years	467
	<hr/> 1,627 <hr/>

WHOOPING COUGH.

29 deaths occurred from whooping cough. The particulars are as follows :—

MONTH.	YEARS OF AGE.						Total.
	0-1.	1-2.	2-3.	3-4.	4-5	5-10.	
January	4	1	..	1	..	1	7
February	2	1	1	..	..	..	4
March	3	1	1	3	..	1	9
April	2	1	..	..	1	..	4
May .....	..	..	1	..	..	..	1
June	1	1	..	..	..	..	2
July	1	..	..	..	..	..	1
August .....	..	..	1	..	..	..	1
September .....	..	..	..	..	..	..	..
October .....	..	..	..	..	..	..	..
November .....	..	..	..	..	..	..	..
December .....	..	..	..	..	..	..	..
Total	13	5	4	4	1	2	29

The death rate in 1930 was equivalent to 0·10 per 1,000 population, as compared with 0·09 in 1929.

ENTERIC GROUP OF FEVERS.

During the year 1930, 68 cases of enteric group infections were brought to notice. The distribution of these cases according to the months in which they were notified, the type of infection (typhoid or paratyphoid), and their place of origin, is recorded in the following table :—

Distribution of Enteric group infections for 1930.

	EXTRA-MURAL.		NEWCASTLE.	
	Typhoid.	Para-typhoid B.	Typhoid.	Para-typhoid B.
January .....	..	..	..	..
February .....	..	..	..	..
March	1	1	..	..
April	1	..	3	..
May	1	..	..	..
June .....	..	..	1	1
July	1 (1)	7	..	15
August .....	..	2	1	15
September	3	4	..	4
October .....	..	2	1	1
November	1 (1)	1	..	1
December .....	..	..	..	..
Totals	8 (2)	17	6	37

The figures in parentheses, which are included in the numbers alongside which they stand, indicate fatal cases.

It will be seen that 25 of the 68 patients came from without the City's boundaries ; the remaining 43 being Newcastle cases proper.

Of the 25 extra-mural patients, six were admitted direct at the request of the authorities concerned, while of the 19 discovered in various institutions in the city, two were transferred to the Infectious Diseases Hospitals of the areas from which they had originally come.

In all, 23 extra-mural patients (8 typhoid, 15 paratyphoid B.) were admitted to the City Hospital.

The 43 City cases comprised six typhoid and 37 paratyphoid B. infections. All these cases, with the exception of one patient who made a successful recovery from paratyphoid B. while treated at home, were removed to Walker Gate.

There were 66 admissions to the City Hospital, but as one paratyphoid patient was re-admitted suffering from a carrier state, only 65 cases were actually treated.

Of the 14 patients who were admitted suffering from typhoid fever, two died, equivalent to a case mortality rate of 14·3 per cent.

There were no deaths amongst the 51 paratyphoid infections admitted to the Hospital, though one patient who was transferred to the Chester-le-Street Infectious Diseases Hospital died there a few days after admission.

Two separate and distinct outbreaks occurred in the City during the year. The first of these consisted of three cases of typhoid, in which two members of the same family and a nurse at the Newcastle General Hospital, who had been in attendance on one of the pair, were the victims. All three made a satisfactory recovery. The original focus of infection was never determined.

The larger and more important outbreak, wherein at least 21 Newcastle inhabitants were infected, began in July, and extended through August into the latter months of the year. Further reference is made to this outbreak below.

The remaining cases were all discrete infections, for which no common causal factor or agents could be discovered, though it is probable that a number of them were secondary to cases included in the larger outbreak

mentioned above and should properly be grouped with it. The details regarding the major outbreak are as follows :—

In July, 15 cases of paratyphoid B. infection were brought to notice. 13 of these were supplied either entirely or in part with milk from a common source, namely, a large Newcastle dairy, which distributed its product throughout the City. The milk in question had been subjected to a pasteurising process prior to bottling. Of the two remaining cases, one had obtained milk quite casually from a number of retailers, while the other had been supplied by a dairyman in Monkseaton, from which town she had come to Newcastle not more than two days before she fell ill.

During August, 15 more cases were reported, and in eight of these the same “pasteurised” milk had been the main or subsidiary source of supply.

Six more cases were brought to light during the months of September, October, and November, and in three of these the “pasteurised” milk was also implicated. No particular significance was attached to these later cases, but the fact that of the 30 cases discovered in July and August, 21—or 70 per cent.—were associated with the same milk supply was considered as being of considerable importance.

The milk in question was admittedly widely distributed throughout the City, but from the particulars available it was estimated that it was consumed by not more than 26 per cent. of the community. That 70 per cent. of the cases of paratyphoid should have partaken of it rendered it immediately suspect. Intensive research, which included the serological examination of 100 of the staff, was undertaken at the dairy, and resulted in the discovery of one male worker who was

excreting *B. Paratyphosus B.* in his stools. Investigation of this man's family elicited the fact that all the other members thereof (wife and two children) showed signs of active or recent paratyphoid infection. Still further inquiry showed that this household had used the "pasteurised" milk as its sole supply, and that the children had been ill with vague intestinal disorders from a month to six weeks before the existence of the father's carrier state had been established. Ultimately it was concluded that in all probability this dairyman's infection was an incident in the epidemic, and not the primary cause. Presumably he had contracted a mild ambulatory form of the disease from the younger members of his family who, at an earlier date, had been infected by the incriminated milk supply.

The extensive investigations which were conducted in the dairy failed to yield any indication of other potential sources of infection amongst the staff.

Attention was accordingly directed to the possibility of a paratyphoid contaminated milk entering the dairy and passing through the various pasteurising processes without destruction of the pathogenic organisms. By the courtesy of the Medical Officers of Health concerned, enquiries were made as to the presence of either recent or remote cases of paratyphoid *B.* fever on any of the 120 farms from which the dairy received its milk. The results of this investigation were negative, though in view of the widespread distribution of the disease in the two northern counties during the summer of 1930, and the comparative mildness of the prevailing infection, the possibility of missed cases having occurred in these areas cannot be definitely excluded.

Within the dairy proper a very detailed examination was made of the various phases of pasteurisation. From the evidence obtained, it was obvious that particularly during the latter part of June, when the infecting milk had presumably been distributed, there had been some slight—though temporary—alteration in the normal procedure of the dairy. Granted the entry of a paratyphoid infected milk at this time, it was shown by means of bacteriological tests that this deviation from the routine procedure would have been sufficient to allow the milk to reach the customer in a state just short of complete sterilisation. It is unfortunate that no more definite conclusion than this should have been reached. As so often happens in these epidemics, the period of danger during which the disease was spread and disseminated had passed by, leaving behind no other trace of its existence than the cases which followed in its train.

A special detailed report on the outbreak was prepared by Dr. Charles and Dr. Porteus, and submitted to the Ministry of Health.

DIARRHŒA.

There were in all 70 deaths from the disease, equal to a death rate of 0·25 per 1,000 population, and this number included 50 deaths of children under two years of age.

TYPHUS.

No case of this disease occurred during the year.

SMALLPOX.

No case of this disease occurred in the City during the year.

The following are the particulars of **Vaccination** during the last twenty-six years :—

Year.	Births Registered.	Successful Vaccinations	Unsuccessful Vaccinations	Exemption Certificates.	
				Number.	Percentage to Total Births
1905	7,958	7,264	27	65	0·8
1906	7,721	6,733	28	92	1·2
1907	7,610	6,702	16	94	1·2
*1908-12	35,265	27,240	114	3,398	9·6
1913-17	34,296	21,251	33	7,144	20·8
1918-22	34,372	19,011	95	9,262	26·9
1923-27	31,290	19,658	30	5,542	17·7
1928	5,780	4,320	19	912	15·8
1929	5,638	3,555	33	1,092	19·4
‡1930	†6,193	4,160	33	1,260	20·4

* Vaccination Act, 1907, came into force.

† Walker District included.

‡ Supervision of Vaccination transferred from Guardians to Health Committee on 1st April, 1930.

The *Public Vaccinators* and *Vaccination Officers* for the various districts of the City are :—

Dene, Heaton and Byker Municipal Wards :—

DR. J. MACRAE, 4, Benton Terrace.

Deputy—DR. A. SUTCLIFFE, 1, Lesbury Road.

St. Anthony's and St. Lawrence Municipal Wards :—

DR. RICHARD DAGGER, 1, Rothbury Terrace.

Deputy—DR. ERIC C. DAGGER, 1, Rothbury Terrace.

Walker District :—

DR. T. J. RYAN, Welbeck Road.

All Saints', St. Nicholas', St. Andrew's, Jesmond, and St. Thomas' Municipal Wards :—

DR. FRANK HAWTHORN, 10, Ellison Place.

Deputy—DR. O. W. OGDEN, 4, St. Mary's Terrace.

Fenham, Arthur's Hill, Westgate and St. John's Municipal Wards :—

DR. A. M. PATERSON, 116, Elswick Road.

Deputy—DR. H. L. TAYLOR, 242, Westgate Road.

Stephenson, Elswick, Armstrong and Benwell Municipal Wards :—

DR. G. D. NEWTON, 105, New Bridge Street.

Deputy—DR. J. B. SINSON, 105, New Bridge Street.

Newcastle General Hospital :—

DR. G. P. HARLAN.

Vaccination Officers :—

Western—W. W. CUMMINGS, 80, Northbourne Street,

Eastern—WM. GARRETT, 34, Harbottle Street.

CHICKENPOX

1,554 cases were notified. There were no deaths.

ERYSIPELAS.

208 cases of this disease were notified and there were 12 deaths.

PUERPERAL SEPTICÆMIA AND PUERPERAL PYREXIA.

93 cases were notified, with 14 deaths. Inquiries were made concerning 92 of these. 20 of the cases were attended by doctors.

INFLUENZA AND PNEUMONIA.

These diseases accounted for 294 deaths as against 457 last year.

Total deaths at age periods.

Under 5 years.	5-15.	15-25.	25-45.	45-65.	65 and over.	Total.
118	8	7	39	71	51	294

As will be seen from the above figures, 118, or 40 per cent., of the deaths occurred below the age of 5 years.

Appended is a statement of the total net deaths at all ages in the City from influenza and pneumonia during 1930 and the previous 18 years :—

YEAR.	INFLUENZA.	PNEUMONIA.
1912	18	248
1913	19	339
1914	22	424
1915	22	433
1916	36	392
1917	27	418
1918	680	540
1919	604	561
1920	90	468
1921	65	411
1922	273	495
1923	15	342
1924	105	415
1925	41	366
1926	49	291
1927	103	339
1928	45	285
1929	127	330
1930	36	258

987 cases of pneumonia, including influenzal-pneumonia, were notified. For the ages and ward distribution, see pages 97 and 98.

Of that number 905, or 92·0 per cent., were visited by Health Visitors. It was found that of these 905 visited cases, 583, or 64 per cent., were primary pneumonia, 92, or 10 per cent., were cases of influenzal-pneumonia, and 230, or 25 per cent., were cases of pneumonia following other diseases.

Sex.—57 per cent. of the cases were males.

Ages.—The ages of the 905 cases visited were as follows :—

Under 1 year.....	102
1-5 years	342
5-15 years	161
15-25 years	59
25-45 years	114
45-65 years	90
and over 65 years	37
	<u>905</u>

Of these, 149 were school children.

Housing.—150 cases occurred in 1 roomed dwellings, 350 cases occurred in 2 roomed dwellings, 187 cases occurred in 3 roomed dwellings, and 218 cases occurred in more than 3 roomed dwellings.

Type of House.—414 cases occurred in flats, 338 cases in tenements, and 148 in self-contained houses, and 5 in lodging houses.

Previous History—

There was a previous history of Measles	in 384 cases.
„ „ „ Whooping Cough	in 267 cases.
„ „ „ Influenza	in 182 cases.
„ „ „ Frequent winter Coughs and Colds	in 744 cases.
„ „ „ Pneumonia	in 243 cases.
„ „ „ Tuberculosis	in 38 cases.

Hospital Treatment.—124 cases of pneumonia were treated in the Infectious Diseases Hospital. The majority of these were from houses where there was overcrowding or other unsuitable home conditions. 27 of these patients died, giving a case mortality of 21·7 per cent.

Deaths.—190, or 21 per cent. of the visited cases of pneumonia died.

VENEREAL DISEASES.

Syphilis was certified as the cause of death in 31 cases.

The work of the treatment clinic has been continued successfully. 1,543 old and new cases attended 23,429 times as out-patients. 21 cases accounted for 495 in-patient days. Of the 812 new cases 246 were syphilis, 417 gonorrhœa, 3 soft chancre, and 146 were conditions other than venereal. 76 per cent. were males.

2,500 doses of salvarsan substitutes were administered to out-patients, and 7 to in-patients.

2,839 Wasserman reactions were carried out by the College of Medicine, and 189 microscopical examinations of pathological material were made by the College and 1,137 at the treatment clinic. The irrigation stations for males and for females in connection with the clinic have been in full use during the year.

47 medical practitioners in the City are qualified to receive free supplies of arseno-benzol compounds. 18 made application for these supplies during the year and 1,011 doses were given.

Newcastle Residents Notified as Attending other Centres.

Cases.—Syphilis, 13 ; gonorrhœa, 15 ; soft chancre, nil ; conditions other than venereal, 3.

Attendances.—136.

Doses of salvarsan substitute given, 14.

In-Patients.—In-patient days, 74. Doses of salvarsan substitutes administered, 5.

Information as to ophthalmia neonatorum will be found in Section II. (The Child).

ENCEPHALITIS LETHARGICA.

During the year 1930, 19 notifications of encephalitis lethargica were received.

16 of these referred to patients in the post-encephalitic state of the disease, whose symptoms for the most part were those of the so-called Parkinsonian syndrome with mask-like face, tremors of the limbs, and mental deterioration. All these cases were investigated, and in every one a history of slight influenza or transitory diplopia occurring at a date some years previous was obtained. These apparently trivial illnesses had undoubtedly been atypical attacks of encephalitis lethargica, and upon them, after a greater or less interval, had followed a progressive retrogression in health, both bodily

and mental. The approximate dates of the original attacks in this series were as follows :—1 in 1919 ; 2 in 1921 ; 1 in 1923 ; 3 in 1924 ; 4 in 1925 ; 3 in 1926 ; 1 in 1928 ; and 1 in 1929. The long interval between the primary attack and the development of sequelæ, the apparent cures and remissions, and the association of mild and fugitive influenza-like illnesses and diplopias, with the very gravest forms of paralysis and mental disorder, are well recognised characters of this treacherous and horrible disease.

During 1930 no proved case of encephalitis lethargica was admitted to the City Hospital, the three definite cases for that year all being treated at home. Of these one has been able to resume his former employment, and the others, though slightly incapacitated, have been able to do light work.

Re-Survey of all Cases of Encephalitis Lethargica.—

It is now 12 years since encephalitis lethargica first appeared in Newcastle, and every other year an opportunity has been found to make a re-survey of all cases of the disease known to have occurred in the City, or to have been reported therefrom since the commencement of the epidemic in 1919. Post encephalitic cases, when met with, have been placed, as far as possible, under the years in which their primary attack occurred.

The usual biennial survey was made in 1930, when it was found that the records of 356 cases were available for analysis. These have been grouped in accordance with the classification employed by Dr. Allan C. Parsons in his report to the Ministry of Health, published in 1928. Patients who recovered are shown as (*a*) totally incapacitated, (*b*) suffering from sequels which interfere with their old occupation, (*c*) suffering from sequels which do not interfere with their old occupation, and (*d*) completely cured.

The cases have been divided into two categories : (a) those admitted to the City Hospital, and (b) those treated elsewhere—a few in other institutions, the majority at home. This has been done because the signs and symptoms of encephalitis lethargica are frequently produced by other conditions, some mild, such as constipation and neuritis, others, *e.g.*, cerebral hæmorrhage, cerebral tumours, tuberculous and septic meningitis, even more fatal than the disease they counterfeit. It is only by calculating death, disability and recovery rates on cases definitely proved to have been encephalitis lethargica, that a true idea of the severity of that disease can be obtained. Accordingly it will be seen that although these various rates have been calculated for both groups of cases, those for the City Hospital will prove more reliable, as all non-encephalitic cases have been excluded from their totals, as the result of clinical, laboratory, and post-mortem investigations. The figures based on 114 traced and proved cases of encephalitis lethargica treated in the City Hospital from 1919 to 1930 speak for themselves—roughly 41 per cent. are dead, 14 per cent. are totally incapacitated (including 6 per cent. who are or have been in mental hospitals), 7 per cent. are able to do some light work, 15 per cent., though still suffering from minor disabilities, can follow their old occupations, and from 22 per cent. to 23 per cent. are completely cured. The figures for the non-hospital cases are even worse. This is due in great part to the inclusion of many of the serious conditions mentioned above, but doubtless the fact that these cases may have lacked some of the careful treatment and attention the others received at Walker Gate may have helped to diminish their prospects of recovery. The following table gives details of all the cases reported since 1919 :—

YEAR.	Notifications.	Admitted.	Proved to be Encephalitis Lethargica.	Cases otherwise diagnosed Encephalitis Lethargica.	Total Hospital Cases.	Not traced.	NUMBER OF PATIENTS.				Non-Hospital Cases.	Not traced.	NUMBER OF PATIENTS.				
							Dead.	Totally Incapacitated.	With Sequels interfering with usual occupation.	With Sequels not interfering with old occupation.			Dead.	Totally Incapacitated.	With Sequels interfering with usual occupation.	With Sequels not interfering with old occupation.	Cured.
1919.....	3	2	1	..	1	1	..	..	..	..	1	..	..	1	..	..	..
1920.....	12	5	4	3	7	..	4	2 (2M)	..	1	7	1	..	1 (1M)	..	..	1
1921.....	20	6	4	1	5	1	..	2 (1M)	..	1	14	1	..	3	..	1	2
1922.....	7	4	2	..	2	..	..	2 (1M)	..	..	3	2	..	..	..	..	..
1923.....	13	2	1	..	1	..	1	..	..	..	11	2	..	2	..	..	2
1924.....	136	76	62	2	64	4	23	8 (2M)	4	12	60	4	23	12 (3M)	1	8	12
1925.....	56	26	16	3	19	..	10	2	1	1	30	5	9	9 (2M)	4	..	3
1926.....	49	15	10	3	13	2	4	..	2	1	34	5	20	5	2	2	..
1927.....	26	13	5	..	5	1	2	..	1	1	13	1	10	..	..	..	2
1928.....	12	3	2	..	2	..	2	..	..	..	9	1	6	1 (1M)	..	1	..
1929	19	5	2	2	4	..	1	..	..	..	14	1	8	1	1	..	3
1930	3	..	..	..	..	..	..	..	..	..	3	..	..	..	2	1	..
Total ...	356	157	109	14	123	9	47	16 (7M)	8	17	199	23	93	35 (7M)	10	13	25
						114		176									
						Percentages based on 114 traced Hospital cases ..		41.2	7.0	14.9							
						Percentages based on 176 traced Non-Hospital cases		52.8	5.6	7.4							

The figures in brackets, *e.g.*, (1M), indicate the number of Patients who are, or have been, in Mental Hospitals as a result of Encephalitis Lethargica.

ACUTE POLIOMYELITIS.

8 cases occurred in the City. There were no deaths.

CEREBRO-SPINAL FEVER.

25 cases were reported during the year, with 19 deaths.

BACILLARY DYSENTERY.

Bacillary dysentery has been prevalent in the City since 1928, and during the past year 207 cases were notified. In only 87 of these, however, was the diagnosis confirmed bacteriologically. Of the latter number five came from extra-mural areas. There were five deaths attributable to the disease, all of which occurred in Newcastle inhabitants.

The majority of the patients were isolated in institutions, and of the 87 proved cases, 84 were admitted to Walker Gate, where four died. The remaining fatal case died at the Newcastle General Hospital. There were two small hospital outbreaks of eight and five cases respectively, both of which affected a children's ward at the Newcastle General Hospital. These two outbreaks were quite separate and distinct, being caused by different types of the dysentery bacillus. It is probable that the disease was introduced into the hospital from outside, and that the infecting agents were patients who, though admitted with indefinite abdominal symptoms, proved on subsequent investigation to be suffering from dysentery.

Though dysentery so introduced is particularly liable to set up minor epidemics in hospitals and wards where children are treated, it is rare that cases so infected are attended by fatal results unless the patient is

suffering from some other serious disease at the time of infection. This unfortunately was the case with three patients in these particular outbreaks.

Although more prevalent during the spring and autumn months of 1930, dysentery was present throughout the year. Its relation to the so-called "summer diarrhoea" of infants has not been fully determined as yet, but it is probable that continued investigation may throw light on this problem.

The circumstances and history of all cases were carefully investigated with a view to obtaining information as to the probable sources of infection. The possibility of the existence of carriers who might have acquired the disease while on foreign service, was also considered. Prolonged enquiries along these lines elicited no definite incriminable cause or source of the infection. The age, sex and mortality incidence of the series of 87 cases are given in the following table :—

	Under 1.	1-2.	2-5.	5-15.	15-25.	25-45.	45 up- wards.	Total.
Male	5 (2)	8 (1)	12	12	3	1	..	41 (3)
Female ...	1	14 (1)	13	13	1	2	2 (1)	46 (2)
Total	6 (2)	22 (2)	25	25	4	3	2 (1)	87 (5)

The figures in parentheses indicate fatal cases.

The incidence of the disease on children under the two first age groups is higher than usual, but this is due to the epidemics in the infants' ward at the Newcastle General Hospital, to which reference has already been made. Apart from this, there are no outstanding features in the age and sex distribution of the disease on which comment is necessary.

Bacteriological investigations were carried out very systematically, and no case was discharged from hospital or from supervision unless the stools, which form the main material for transmitting the disease, were free from the causal organism. In all, five different dysentery organisms were implicated in the causation of the cases—three strains of the Flexner bacillus, the Sonne bacillus, and the recently discovered bacillus which has been named the Newcastle Bacillus by its discoverers, Dr. F. H. A. Clayton and Dr. S. H. Warren. The distribution of these organisms among the cases is as follows :—

	FLEXNER.				Sonne Bacillus.	Newcastle Bacillus.	Totals.
	W.	X.	Y.	Z.			
Total No. of Cases ...	38	2	..	17	29	1	87
Fatal Cases	4	..	..	..	1	..	5
Non-Fatal Cases.....	34	2	..	17	28	1	82

The actual significance of the increased prevalence of the disease in recent years is still perplexing. It is probable that dysentery has always been present in this country. Records of its existence go back to the time of Edward I., who died of the disease at Burgh-on-Sands in 1307. During the eighteenth century Newcastle was a veritable hotbed of the disease, and in the nineteenth century it often featured in the records of the Newcastle upon Tyne Dispensary. Throughout the history of the disease there have been periods when it has practically disappeared, or if present, has been exceedingly mild and modified in type, only to return in cyclical fashion with high incidence and heavy mortality. Whether this present outbreak, which has now been with us for three years, is to be regarded as the beginning, or as the peak of a wave of activity on the part of the dysentery organisms, it is impossible to say. The best hope of keeping the invader within bounds, and of limiting its severity, lies in the careful investigation of all cases as they occur, and in the employment of patient research and enquiry.

**CITY HOSPITAL FOR INFECTIOUS DISEASES,
WALKER GATE.**

123A

Diseases Admitted—1930.

		AFTER OBSERVATION PROVED TO BE:—																											
SENT IN AS	Number.	Scarlet Fever.	Diphtheria.	Diphtheria Carriers.	Enteric Group Fevers.	Dysentery.	Measles.	Rubella.	Varicella.	Mumps.	Pertussis.	Epidemic Cerebro-Spinal Meningitis.	Other forms of Meningitis.	Poliomyelitis.	Encephalitis Lethargica.	Pneumonia.	Bronchitis.	Influenza.	Other Respiratory Diseases.	Erysipelas.	Skin and Septic Conditions.	Puerperal Pyrexia.	Tonsillitis.	Gastro-enteritis.	Other Gastro-intestinal Diseases.	Ophthalmia Neonatorum.	General Diseases.	Injuries.	Unclassified.
Scarlet Fever	621	576	2	..	..	..	3	8	1	..	..	..	..	..	..	1	..	..	..	..	15	..	10	..	..	..	1	..	4
Diphtheria	272	8	156	31	..	..	..	..	..	..	..	1	..	..	..	..	..	..	13	..	..	..	56	..	4	..	1	1	1
Diphtheria Carriers	4	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Group Fevers....	97	..	..	..	65	1	..	..	..	..	..	..	3	..	..	6	..	..	..	..	..	..	..	11	1	..	7	1	2
Dysentery	164	..	..	1	1	81	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	75	4	..	2	..	..	..
Measles	60	..	..	..	..	..	57	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..
Rubella.....	9	..	..	..	..	..	..	8	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Varicella	21	..	..	..	..	..	..	..	21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mumps	9	..	..	..	..	..	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pertussis	19	..	..	..	..	..	..	..	..	..	17	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..
Epidemic Cerebro-Spinal Meningitis.....	18	..	..	..	..	..	..	..	..	..	..	14	..	..	..	1	..	..	..	..	1	..	..	..	1	..	1	..	..
Other forms of Meningitis	18	..	..	..	..	..	..	..	..	..	..	8	3	..	..	2	..	..	1	..	..	..	..	..	..	..	2	..	2
Poliomyelitis	4	..	..	..	..	..	..	..	..	..	..	1	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Encephalitis Lethargica .	2	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Pneumonia	137	..	..	..	..	..	2	..	..	..	3	..	..	..	..	110	13	..	4	..	1	..	..	..	..	..	4	..	..
Bronchitis	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Influenza	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..
Other Respiratory Diseases	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Erysipelas.....	114	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	107	5	..	..	..	..	..	..	..	2
Skin and Septic Conditions	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	..	..	..	..	..	..	..	..
Puerperal Pyrexia	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	..	..	..	..	..	..	1
Tonsillitis	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	..	..	..	..	..	..
Gastro-enteritis	6	..	..	..	..	2	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	3	..	..	..	..	..
Other Gastro-intestinal Diseases	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..
Ophthalmia Neonatorum.	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
General Diseases.....	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	..	..	..
Injuries.....	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..
Unclassified	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12
TOTALS	1649	584	158	36	66	84	62	17	22	9	20	24	7	3	..	124	14	2	19	107	34	11	81	89	14	4	26	7	25

CITY HOSPITALS FOR INFECTIOUS DISEASES.

Accommodation.

NAMES AND SITUATION OF HOSPITALS.	TOTAL AVAILABLE BEDS
City Hospital for Infectious Diseases, Walker Gate—	
Fever Pavilions Beds. 232	
(One of 30 beds temporarily appropriated for Tuberculosis)	
Tuberculosis Pavilions 106	
	338
Smallpox and Isolation Hospitals, Town Moor	172

City Hospital, Walker Gate.

YEAR.	Population of the City.	Number of Beds at Hospital for Fever Cases.	Total Admissions (exclusive of Phthisis and Smallpox).	Percentage of Scarlet Fever, Diphtheria and Enteric Fever Cases Admitted to Cases Notified.
1890	182,866	104	219	21·3
1900	213,039	104	290	38·6
1909	263,064	172	1,090	78·0
1910	265,077	172	912	83·0
1911	267,261	172	1,110	83·1
1912	269,193	172	1,542	86·4
1913	271,295	172	1,286	88·3
1914	271,523	172	1,835	78·9
1915	278,107	232	1,886	90·5
1916	278,107	232	1,380	87·0
1917	278,107	232	1,303	87·5
1918	278,107	232	1,245	87·5
1919	275,099	232	1,370	84·3
1920	286,061	232	1,710	86·4
1921	278,400	232	1,683	82·4
1922	281,600	232	1,032	86·3
1923	283,800	232	991	92·6
1924	285,900	232	1,502	90·5
1925	286,300	*232	1,711	86·4
1926	284,700	*232	1,397	89·1
1927	288,500	*232	1,493	89·7
1928	281,500	*232	1,294	92·9
1929	283,400	232	1,713	89·1
1930	283,400	*232	1,649	96·4

* 30 of these beds temporarily appropriated for Tuberculosis patients.

CITY HOSPITAL, WALKER GATE.

(Fever Pavilions).

Admissions during the year—1,649.

The *average daily number* of patients in the hospital was 112, exclusive of 120 cases of Phthisis.

RATE PER CENT. OF CASES REMOVED TO HOSPITAL TO CASES NOTIFIED.

	1890	1895	1900	1905	1910	1915	1920	1925	1926	1927	1928	1929	1930
Scarlet Fever	13.4	33.0	35.0	50.1	84.5	91.3	85.7	85.0	86.6	88.6	91.9	94.7	95.9
Diphtheria	8.3	28.7	40.0	36.8	80.1	89.1	89.1	94.1	93.3	95.2	94.6	96.5	97.5
Enteric Fever	38.9	48.0	54.5	52.0	90.5	87.0	90.0	96.4	90.9	78.9	95.5	94.7	97.6
All cases of the above, } together with Con- } tinued and Typhus } Fever and Cerebro- } Spinal Fever, etc.	21.3	34.6	38.6	47.8	83.0	90.5	86.4	86.0	87.2	89.7	91.8	93.8	96.1

Diseases and Mortality Rates.

MORTALITY OF CASES TREATED IN HOSPITAL AS COMPARED WITH CASES NOT
REMOVED DURING 1930.

DISEASE.	HOSPITAL.			NOT REMOVED.		
	Total Cases. (Verified)	Deaths.	Case Mortality per cent.	Total Cases.	Deaths.	Case Mortality per cent.
Scarlet Fever	584	4	0.69	26	..	..
Diphtheria ...	158	4	2.5	5	..	..
Enteric Group of Fevers	66	2	3.0	1	..	..

Present Death Rates compared with those of Previous Years.

RETURN SHOWING THE NUMBER OF CASES OF
SCARLET FEVER, DIPHTHERIA, AND ENTERIC FEVER ADMITTED TO HOSPITAL
AND MORTALITY RATES PER CENT.

1891-1900.

YEARS.	NUMBER OF CASES ADMITTED TO HOSPITAL.			NUMBER OF DEATHS.			CASE MORTALITY PER CENT.		
	Scarlet Fever.	Diph- theria.	Enteric Fever.	Scarlet Fever.	Diph- theria.	Enteric Fever.	Scarlet Fever.	Diph- theria.	Enteric Fever.
1891-1895 ..	1105	92	277	34	26	51	3.1	28.3	18.4
1896-1900 ..	1087	103	442	41	21	86	3.8	20.6	19.5

1915-1929.

1915-1919 ..	3,402	998	194	99	89	21	2.9	9.0	10.8
1920-1924 ..	3,919	1,037	78	37	73	9	0.9	7.5	11.6
1925-1929 ..	3,612	908	123	43	62	23	1.2	6.8	18.7

1930.

1930.....	584	158	66	4	4	2	0.69	2.5	3.0
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Admissions and Deaths, 1930.

DISEASE.	ADMISSIONS.												DEATHS.													
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
Scarlet Fever	82	61	47	42	43	26	34	38	48	55	53	55	584	4	4
Diphtheria	16	7	39	15	14	7	12	8	10	11	11	8	158	1	1	4
Diphtheria Carriers	1	5	10	3	1	2	2	..	2	3	4	3	36	1
Enteric Group Fevers	2	4	1	2	21	17	12	4	3	..	66	..	2	..	1	1	..	2
Dysentery	1	15	8	8	8	1	1	5	12	11	8	6	84	1	1	..	4
Measles	2	4	3	1	1	1	1	2	1	1	17	28	62	..	..	..	..	..	..	1	..	..	..	3	10
Rubella .....	..	..	3	2	6	3	..	..	2	..	..	1	17	..	..	..	..	..	..	..	..	..	..	..	..
Varicella	3	2	..	..	1	2	2	1	2	3	2	4	22	..	..	..	..	..	..	..	..	..	..	..	..
Mumps .....	..	..	3	1	2	2	..	..	..	..	1	..	9	..	..	..	..	..	..	..	..	..	..	..	..
Pertussis	5	3	2	2	2	2	2	..	..	..	1	1	20	1	1	1	..	..	..	..	..	..	..	..	3
Epidemic Cerebro-Spinal Meningitis	2	5	1	1	5	1	3	..	..	2	3	1	24	1	3	1	..	5	1	2	..	..	2	3	18
Other forms of Meningitis ..	..	1	..	1	1	1	..	..	1	1	..	1	7	..	1	..	1	1	1	..	..	1	..	1	7
Poliomyelitis .....	..	..	..	..	..	..	..	3	..	..	..	..	3	..	..	..	5	..	2	1	3	..	5	1	27
Pneumonia	16	15	8	13	12	12	5	10	6	6	12	9	124	2	5	..	..	..	..	..	..	..	..	..	1
Bronchitis .....	..	2	1	..	..	3	..	1	2	1	1	3	14	..	1	..	..	..	..	..	..	..	..	..	1
Influenza .....	..	..	..	..	..	..	..	..	..	1	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..
Other Respiratory Diseases ..	4	..	..	1	9	..	..	2	..	2	1	..	19	..	..	..	..	..	..	1	1	1	1	..	1
Erysipelas	11	19	8	8	5	8	9	7	6	8	11	7	107	2	2	..	1	..	1	1	1	1	1	1	11	
Skin and Septic Condition ..	3	2	4	2	2	1	5	3	2	..	4	6	34	..	..	1	1	1	..	..	..	..	..	..	3
Puerperal Pyrexia	1	..	1	2	3	1	..	7	2	1	..	..	11	..	..	1	1	1	..	..	..	..	..	..	..
Tonsillitis	6	2	9	3	5	4	4	7	10	13	11	7	81	..	2	..	..	..	..	..	1	..	..	..	3
Gastro-Enteritis	1	13	6	10	10	5	7	11	14	7	4	1	89	..	..	..	..	..	..	..	1	..	..	..	..
Other Gastro-Intestinal Diseases	1	2	..	1	1	2	3	3	1	..	..	..	14	..	..	..	..	..	..	..	..	..	..	..	..
Ophthalmia Neonatorum ..	..	..	..	2	..	..	..	1	1	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..
General Diseases	2	..	3	1	4	4	1	2	2	4	2	1	26	1	..	..	..	..	1	..	..	..	..	..	2
Injuries .....	..	1	3	..	..	1	..	..	..	1	1	..	7	..	..	..	..	..	..	..	..	..	..	..	..
Unclassified	3	2	3	2	5	1	1	1	2	2	2	1	25	..	..	..	..	..	..	..	..	..	..	..	..
TOTALS	160	161	164	125	141	92	113	122	138	137	153	143	1649	12	17	3	10	7	7	7	6	5	4	14	8	100

Length of Stay in Hospital of Early Fatal Cases.—

The following cases died within a short period after their admission to Hospital :—

	<i>Within 24 hours.</i>	<i>Within 48 hours.</i>
Scarlet Fever .....	..	2
Diphtheria	3	..
Enteric Group of Fevers.....	1	..
Dysentery .....	..	1
Measles with Broncho-pneumonia	1	2
Epidemic Cerebro-spinal Meningitis	4	..
Pneumococcal Meningitis .....	..	1
Tuberculous Meningitis .....	..	1
Pneumonia	2	5
Erysipelas	2	2
Gastro-enteritis.....	1	1
	<hr/> 14 <hr/>	<hr/> 15 <hr/>

Average stay in Hospital during the last Twenty-three Years.

YEARS.	All Cases.		Scarlet Fever.		Diphtheria (including carriers).		Enteric Fever.		Other Diseases.	
Aver- age	No.	Average Stay in Days	No.	Average Stay in Days	No.	Average Stay in Days	No.	Average Stay in Days	No.	Average Stay in Days
1908-12	1,054	46·7	599	51·7	326	41·3	68	46·3	61	29·6
1913-17	1,538	39·6	929	45·6	220	39·9	70	47·4	318	20·6
1918-22	1,408	31·2	758	37·1	215	43·2	15	46·6	420	16·8
1923-27	1,419	31·9	751	35·2	185	44·3	21	54·0	462	21·1
1928 ..	1,294	22·5	452	29·3	205	33·6	25	44·5	612	12·9
1929 ..	1,713	21·7	543	29·7	247	29·6	38	42·2	885	13·6
1930 ..	1,649	23·9	584	32·5	194	34·7	66	44·3	805	13·5

DIPHThERIA.

158 cases were admitted to hospital. 121 of these were simple faucial or tonsillar cases, and in 8 others the infection was limited to the nose. All of these recovered. In a group of 18 faucio-pharyngeal cases, with varying degrees of nasal involvement, there were three deaths—equivalent to a case mortality rate of 16·6 per cent.

There were 11 cases of laryngeal or tracheal diphtheria, of whom one, or 9·0 per cent., died. In three of these cases the obstruction was so considerable as to require tracheotomy immediately upon admission to the City Hospital. Every one of these cases recovered.

The case mortality of the whole series of 158 cases was 2·5 per cent.—the lowest recorded in the annals of the hospital. Against this must be placed the comparatively high mortality of the faucio-pharyngeal cases with nasal involvement. With regard to this latter type of case, ignorance and failure of parents to recognise the serious significance of the early signs of diphtheria are in large measure responsible for the high death rate which characterises it. When diagnosed early, the disease can be arrested almost immediately by injection of antitoxin. On the other hand, delay permits the diphtheria germ to spread, and the considerable toxæmia which ensues renders the patient liable to the innumerable complications which so often lead to a fatal issue.

So far as the laryngeal and tracheal types of the disease are concerned, the records show that during the 11 years from 1920-1930, 363 such cases have been admitted to the City Hospital, and 69 have died—a case mortality rate of 19·0 per cent. If we analyse the figures still further, and consider those who were treated without operative interference, we find that in 223 cases of this kind 21—or 9·4 per cent.—died: a mortality rate little higher than that for all cases of diphtheria. But where tracheotomy was necessary, the mortality was much higher, and of the 140 patients submitted to the operation, 50—or 35·7 per cent.—died. (This includes 3 cases where intubation was performed: 2 of which were fatal.) These figures compare quite favourably with the

general English experience ; but of recent years American investigators have attacked this problem, and by the introduction of new methods of treatment, have reduced their operation mortality rate for this type of case from 40 per cent. to little more than 3 per cent. The method employed consists of introducing a fine tube through the mouth into the larynx, and by means of an electric exhaust pump, sucking out the membrane. The treatment may be required to be repeated two or three times a day ; but the results appear to have been eminently satisfactory. The procedure requires a certain amount of surgical dexterity, and the use of apparatus collected and adapted for the special purpose. It is hoped to make this form of treatment available at the City Hospital in due course.

SCARLET FEVER.

During the year 1930, 584 cases of scarlet fever were admitted to Walker Gate, as against 543 in 1929. The incidence of the disease was relatively heavier in the first three months of the year, during which 190 cases were admitted.

The prevailing type of scarlet fever remained mild, and the mortality rate was slightly lower than for the previous year—0·69 per cent., instead of 0·74 per cent. The complication attack rate, however, was distinctly higher, namely, 30 per cent., as contrasted with 23·8 per cent.

Scarlet Fever antitoxin has been used to an even greater extent than in previous years. The numbers and relative proportions of patients receiving this form of treatment for the period 1926--1930 are as follows :—

	1926	1927	1928	1929	1930
Scarlet Fever Cases admitted	831	741	452	543	584
Number treated with Antitoxin . . .	78	172	177	169	249
Percentage treated with Antitoxin	9.5	20.3	39.2	31.1	42.6

In previous reports attention has been directed to the benefits accruing from the use of scarlet fever antitoxin and the difficulties experienced in statistically demonstrating these facts. Comparisons between various forms of treatment are always subject to the fallacy that in practice one cannot divide all the cases met with into two similar groups, and give the remedy to one and withhold it from the other. If the remedy is of any value at all, the impulse to give it to every serious case is irresistible, and under these circumstances no true comparison can be drawn. The two groups of such a suggested experiment can never be similar; the one which receives the remedy under trial always contains the severer cases, and the patients from whom the remedy is withheld, *i.e.*, the milder cases, find their way into the second group. Nevertheless, despite the fact that complete statistical proof as to the efficacy of scarlet fever antitoxin is lacking, every practitioner who has had any experience of the remedy in practice, testifies to its merits. Not only is the administration of the serum to any severe case of scarlet fever almost invariably followed by a fall in temperature, amelioration of symptoms, and diminution of toxæmia, but it is now recognised that its remedial powers are not limited to that disease. Recent research has demonstrated the value of the antitoxin in the treatment of certain other diseases, notably puerperal fever and erysipelas.

In the following table is summarised the statistical information regarding all cases of scarlet fever treated during the year under review :—

SCARLET FEVER.	Num-ber.	Per-centage treated with Anti-toxin.	Per-centage with Compli-cations.	Mor-tality Rate.	Return Case Rate.	Average stay in Days in Hospital.		
						All Cases.	Com-plicated Cases.	Non-compli-cated Cases.
All Cases ..	584	42·6	30·0	0·69%	2·7%	32·5	41·0	28·8
Antitoxin Cases ..	249	100	32·5	0·80%	4·0%	34·4	46·7	28·5
Non-Anti-toxin Cases	335	Nil.	28·4	0·59%	1·8%	31·0	36·2	28·9

PERCENTAGE INCIDENCE OF COMPLICATIONS.

	Rhin-orrhœa.	Ot-orrhœa.	Adenitis.	Rheu-matism.	Album-inuria.	Neph-ritis.	Cardiac.	Other Compli-cations.
All Cases	6·7	4·9	12·3	0·9	1·0	0·9	0·2	2·6
Antitoxin Cases	5·6	4·8	14·0	1·6	0·8	1·2	0·4	3·2
Non-Anti-toxin Cases	7·5	5·1	11·0	0·3	1·2	0·6	..	2·1

Otorrhœa and Rhinorrhœa.—The work of the Consulting Oto-Rhinologist to the Hospital (Mr. W. Frank Wilson), in the treatment and supervision of scarlet fever cases complicated by otorrhœa or rhinorrhœa has been continued along lines developed in recent years.

The incidence of these complications, though higher than in 1929, was, nevertheless, below the average for recent years. 68 cases occurred in 584 admissions—a complication rate of 11·6 per cent.—as contrasted with 8·6 per cent. in the previous year.

The distribution of these cases according as to whether or not they were treated with scarlet fever anti-toxin, and their respective average stay in hospital, are shown in the following table :—

		Number of Cases.	Average stay in Hospital (days).
Non-Antitoxin Cases	Rhinorrhœa	25	34·1
	Otorrhœa	17	45·6
Antitoxin Cases	Rhinorrhœa	14	40·3
	Otorrhœa	12	71·2
Total.....		68	44·8

The average stay per patient of cases in this group was 44·8 days, as contrasted with the figure given for 1929, namely, 42·9 days.

In the treatment of these patients it was found necessary to perform three operations—two for the removal of tonsils and adenoids and one for mastoidectomy. The operations were entirely successful, and the patients concerned made uneventful recoveries.

Subsequent Progress.—As in previous years, supervision of all cases of rhinorrhœa and otorrhœa has been maintained after their discharge from hospital, and every one of the 68 cases of this type has been visited at varying intervals. The result of these visits showed that amongst 39 cases of rhinorrhœa, 2, or 5 per cent., still had slight nasal discharge, whilst 6, or 20·7 per cent. of the cases of otorrhœa had slight persisting deafness or discharge from the ear.

Included in the above patients visited was the one case upon which mastoidectomy had been performed. This patient had made a complete recovery without any after effects.

All the cases in which the nasal or aural discharge has persisted have been kept under observation by Mr. Wilson at the Out-patient Department of the Royal Victoria Infirmary.

“ Return ” Cases.—The following are details of the “ return ” cases of scarlet fever during the year :—

SCARLET FEVER.	“ Infecting ” Cases.		“ Return ” Cases.		“ Infecting ” Cases.
Total Admissions.	No.	Per- centage.	No.	Per- centage.	Average Day of Disease when Discharged.
584	17	2·9	16	2·7	34

SEASONAL OCCURRENCE.

QUARTER.	Total Scarlet Fever Admissions.	“ Infecting ” Cases.		“ Return ” Cases.	
		No.	Percentage	No.	Percentage.
January to March	190	2	1·0	2	1·0
April to June	111	4	3·6	3	2·7
July to September	120	5	4·2	5	4·2
October to December ..	163	6	3·7	6	3·7

Of the 17 “ infecting ” cases (a) 9 had no complications or discharges whilst in hospital, and remained “ clean ” after reaching home, (b) 3 had no complications whilst in hospital but developed discharges after reaching home, while (c) 5 had complications whilst in hospital, but were “ clean ” on discharge.

Of these classes, the average day of disease on discharge from hospital of the supposed infecting cases, and the period elapsing after that discharge and the onset of illness in the “ return ” cases, were as follows :—

Class (a)—31 and 12 days.

Class (b)—30 „ 12 „

Class (c)—41 „ 15 „

“ RETURN ” CASES FOR YEARS 1906-1930.

YEARS.	Total Scarlet Fever Admitted.	“ Infecting ” Cases.		“ Return ” Cases.	
		No.	Percentage.	No.	Percentage.
1906-10...	2,203	63	2·8	82	3·7
1911-15...	5,185	217	4·2	251	4·8
1916-20...	3,202	104	3·2	112	3·5
1921-25...	3,850	93	2·4	105	2·7
1926.....	831	31	3·7	33	3·9
1927.....	750	25	3·3	26	3·5
1928.....	452	7	1·5	6	1·3
1929.....	543	31	5·7	29	5·3
1930.....	584	17	2·9	16	2·7

Hospital and Home “ Isolation ” Compared.

In order to determine the relative liability to further infection, subsequent to the first, in hospital and home-isolating households respectively, a careful record has been kept for eighteen years of the number of presumably susceptible persons in each invaded house, all, other than the original patient, below 12 years of age being so classed, and the proportionate incidence of secondary cases calculated.

Cases occurring within seven days of the “ isolation ” of the original case are not counted, as these probably acquired their infection before the influence of the “ isolation ” could be felt. Cases occurring subsequently to the seventh day of “ isolation ” of the original case, and prior to the release of the latter, are classed as “ incidental ” infections. Cases occurring within 28 days after the release of the original case from “ isolation ” are classed as “ return ” infections.

The table on page 134A shows the results obtained.

Hospital and Home “Isolation” compared.

YEAR	1913		1914		1915		1916		1917		1918		1919		1920		1921		1922		1923		1924		1925		1926		1927		1928		1929		1930		18 YEARS.	
Patient “isolated” at.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.
Cases of Scarlet Fever treated	853	90	1404	311	1305	111	677	51	409	36	381	3	630	86	1105	184	1115	249	560	101	434	40	705	78	1036	179	831	134	750	100	410	40	470	31	549	26	13,624	1,850
“Susceptibles” in the homes of each class of patient	1131	53	1708	244	1462	86	800	8	509	17	450	20	726	47	1203	87	1401	147	647	50	563	16	807	32	1084	102	911	67	831	35	477	26	509	8	595	12	15,814	1,057
“Incidental” infections	69	3	78	28	85	7	33	2	25	..	18	..	59	1	69	5	88	16	37	5	31	2	34	3	74	10	32	3	41	5	20	1	31	..	23	..	847	91
Percentage of “incidentals” to “susceptibles”	6.1	5.7	4.6	11.5	5.8	8.1	4.1	25.0	5.0	..	4.0	..	8.1	2.1	5.7	5.7	6.3	10.9	5.7	10.0	5.5	12.5	4.2	9.4	6.8	9.8	3.5	4.5	4.9	14.3	4.2	3.8	6.1	..	3.8	..	5.35	8.6
“Return” Infections	29	..	84	..	55	2	21	1	20	..	14	..	22	..	49	3	30	7	7	1	17	1	29	..	23	..	34	1	26	..	6	..	29	1	16	1	511	18
Percentage of “returns” to “susceptibles”	2.6	..	4.9	..	3.8	2.3	2.6	12.5	3.9	..	3.1	..	3.0	..	4.1	3.4	2.1	4.8	1.0	2.0	3.0	6.2	3.6	..	2.1	..	3.7	1.5	3.1	..	1.3	..	5.7	12.5	2.7	8.3	3.2	1.7
Total of “incidental” and “return” infections	98	3	162	28	140	9	54	3	45	..	32	..	81	1	118	8	118	23	44	6	48	3	63	3	97	10	66	4	67	5	26	..	60	1	39	1	1,349	109
Percentage of this total to “susceptibles” ..	8.7	5.7	9.5	11.5	9.6	10.5	6.7	37.5	8.8	..	7.1	..	11.2	2.1	9.8	9.2	8.4	15.6	6.8	12.0	8.5	18.7	7.8	9.4	8.9	9.8	7.2	6.0	8.1	14.3	5.4	3.8	11.8	12.5	6.5	8.3	8.5	10.2
Average number of rooms in the home per “susceptible”	2.1	6.9	2.2	4.1	1.9	4.8	2.0	18.5	2.1	5.2	2.2	6.2	2.5	4.8	2.2	7.5	2.1	6.0	2.1	6.9	2.1	9.9	2.3	8.8	2.3	5.8	2.3	7.6	2.3	10.5	2.7	6.7	2.8	16.6	2.8	9.7	2.2	6.2

For the purpose of this table a “return” case is counted to the year in which the “infecting” case was admitted, even though the latter may have been discharged, or the “return” case admitted, in the following year.

ERYSIPELAS.

Of recent years erysipelas has shown a tendency to become one of the commoner and severer infectious diseases prevailing in the City. Its incidence and mortality approximate roughly to those of diphtheria, with the notable exception that while the latter is a disease of children and young people, erysipelas principally attacks the middle-aged and elderly.

In the following table the number of notifications of erysipelas, the deaths caused by the disease, and the case mortality rate are detailed for the years 1926-1930. In addition, similar information is given for such of these cases as were admitted to the City Hospital, together with the duration of their stay in hospital.

YEAR.	Total Notifica- tions.	Deaths.	Mor- tality Rate. Per Cent.	CITY HOSPITAL.			
				Admis- sions.	Deaths.	Mor- tality Rate. Per Cent.	Dura- tion of stay in Hospital Days.
1930.....	208	12	5·8	107	11	10·3	11·3
1929.....	220	11	5·0	85	8	9·4	13·0
1928.....	234	19	8·1	49	6	12·2	12·6
1927.....	212	12	5·7	51	2	3·9	14·5
1926.....	172	5	2·9	31	2	6·5	25·6

The policy of admitting these patients to Walker Gate was extended during 1930, with a view to giving them the benefit of good nursing and the most recent advances in treatment. In practice, it is the severer cases that are brought to hospital, and accordingly it is fallacious to contrast the results of these cases with those which are so mild, or so conveniently situated, that they can be left at home

Erysipelas is due to an organism of the same family as the recently determined causal agent of scarlet fever—namely, the hæmolytic streptococcus. The antitoxin

which has been discovered and used in the treatment of scarlet fever is also of considerable value in neutralising the toxæmia in erysipelas. By its use it is possible, in a large number of cases, to shorten the period of illness and bring about an early and uneventful recovery. This antitoxin treatment has been in use at the City Hospital since 1928, and has been extensively employed during 1929 and 1930. It will be observed from the table that the present duration of stay in hospital—11·3 days—is appreciably less than in 1927, and cannot be compared with the period of hospital treatment found necessary in 1926.

On the other hand there is no corresponding improvement in the mortality rate. In 1930 this was 10·3 per cent. for all cases of erysipelas treated in hospital—as contrasted with 3·9 per cent. in 1927 and 6·5 per cent. in 1926. Of the 107 cases admitted to hospital, 65 were given antitoxin, of whom 8, or 12·3 per cent. died. Among the 42 non-antitoxin cases there were 3 deaths—a mortality rate of 7·0 per cent.

The difficulties encountered in demonstrating statistically the value of any antitoxin have already been touched on in the section on scarlet fever, and the same apply in the case of erysipelas. Nevertheless, the possession of such a valuable remedial agent as scarlet fever antitoxin has undoubtedly been of advantage to the practising physician, and so to the patient.

Mixed Infections.

33 patients—or 2·0 per cent. of those sent into hospital, were found, on admission, to be suffering from or incubating two or more distinct infectious diseases, as follows :—

Scarlet Fever with Diphtheria	2
Scarlet Fever with Dysentery	1
Scarlet Fever with Measles	3
Scarlet Fever with Varicella.....	14
Scarlet Fever with Mumps	4
Scarlet Fever with Pertussis	3
Scarlet Fever with Varicella and Pertussis	1
Diphtheria with Scarlet Fever	1
Diphtheria with Measles	1
Diphtheria with Varicella	1
Diphtheria with Pertussis	1
Dysentery with Varicella	1

Cross Infections.

During the year 10 patients, or 0·61 per cent. of the total admissions, contracted a second infection in the wards of the hospital. The details are as follows, the primary infection being stated first :—

Scarlet Fever with Measles.....	3
Scarlet Fever with Varicella.....	3
Diphtheria with Scarlet Fever	3
Diphtheria Carrier with Measles	1

In the cases of the cross infection with measles and varicella, these latter diseases were contracted from patients in the same ward, who were suffering from scarlet fever or carrying diphtheria bacilli on admission, and also simultaneously incubating measles or varicella. The three cases of cross infection with scarlet fever, which occurred in the diphtheria ward, were not satisfactorily explained. It is presumed that they were due to cross infection from a case of diphtheria in whom a coincident attack of scarlet fever had been masked by the more predominant signs of diphtheria. It is gratifying to relate that all the “cross infected” patients made satisfactory recoveries.

Bacteriological Laboratory, City Hospital.

The following examinations were made in connection with the patients in the wards of the hospital :—

Swabs for Diphtheria Bacilli	1,591
Sputa for Tubercle Bacilli	711
Other Examinations	112
Total	<u>2,414</u>

Expenses of Maintenance.

Of the patients admitted, the expense of maintenance is charged as under :—

	CASES.
To the Newcastle Sanitary Authority	1,612
To private guarantors	6
Tyne Port Sanitary Authority	2
Other Local Authorities	18
Military Authorities..	11
TOTAL.....	<u>1,649</u>

Staff Sickness.

Nursing Staff.—83 of the Nursing Staff were off duty owing to sickness for a total of 1,381 days. 11 suffered from tonsillitis, 5 from influenza, 2 from rubella, 1 from scarlet fever, and 1 was incapacitated as the result of an accident.

Domestic Staff.—34 were off duty through sickness for a total of 354 days. 12 suffered from influenza, 5 from tonsillitis, and 2 were incapacitated by reason of accident.

The case of scarlet fever in a member of the nursing staff is the first to be recorded since 1927. The patient in question was a “ Dick positive ” probationer, who had joined the staff of the hospital three weeks previously, and was doing duty in the Sanatorium pending her immunisation against scarlet fever. Unfortunately, a patient in the Sanatorium developed this latter disease,

and within a few days the nurse, who had been in attendance, contracted the infection. She made an uneventful recovery. Apart from this, there were no other cases of scarlet fever, diphtheria, or the enteric group of fevers, among the nursing or domestic staff. This freedom from the major infectious diseases is due to the steady pursuit of inoculation and immunisation against these diseases which has been carried on during recent years. The great saving in health, time and expense which has accrued from the adoption of these preventive measures will be sufficiently obvious without further comment.

A further extension of this preventive work has been put into operation during the past year. Before commencing duty in the Sanatorium, all nurses and members of the domestic staff are subjected to an intradermal tuberculin test to determine their susceptibility to tuberculosis. In addition, an X-ray photograph of the chest of each individual is taken and filed for future reference. Needless to say, where any condition at all suspicious of tuberculosis is discovered, the affected nurse or maid is not employed in the Sanatorium.

SMALLPOX AND ISOLATION HOSPITALS, TOWN MOOR.

Owing to the disappearance of Smallpox from the neighbourhood of Newcastle upon Tyne and Tyneside, it was not found necessary to bring the wards of the Smallpox and Isolation Hospitals into use at any time throughout the year.

DISINFECTION, Etc.

5,452 cases of notifiable infectious disease were inquired into by the Infectious Disease Inspectors and Health Visitors, and, with the exception of measles and chickenpox, the houses or rooms connected therewith disinfected by spraying with formalin. In connection with cases of tuberculosis, 738 houses, including 896 rooms, were similarly disinfected. 766 visits were made, and disinfection was also carried out in 215 special cases.

148 extra visits of supervision to cases treated at home were made by the Infectious Disease Inspectors.

190 visits were made to cases who had suffered from otorrhœa and rhinorrhœa whilst in hospital.

Inquiries were also made in connection with 16 smallpox contacts. These persons were kept under observation until the possible incubation period was over.

INFECTED ARTICLES TREATED IN THE DISINFECTING APPARATUS AT THE CITY HOSPITAL FOR INFECTIOUS DISEASES, WALKER GATE.

ARTICLES FROM CITY.		ARTICLES—HOSPITAL PROPERTY.	
1930	1929	1930	1929
20,752	19,761	22,203	17,996

No disinfecting was done at the Smallpox Hospital.

The staff have thus dealt with 42,955 articles during the year.

Fluid disinfectant, in half-pint tins, was given out free on the order of the special inspectors, for home use in connection with infectious disease. Every precaution was taken to ensure that the disinfectant was properly and economically used.

DISINFECTANTS DISTRIBUTED—1930.

FROM	FOR INFECTIOUS DISEASES.	FOR PHTHISIS.
	FLUID ($\frac{1}{2}$ pint tins.)	FLUID ($\frac{1}{2}$ pints.)
Health Department	143	....
Tuberculosis Dispensary .....	....	640
Corporation Yard, Benwell	10	....
TOTAL	153	640

BACTERIOLOGICAL INVESTIGATIONS, 1930.

The following is a report on the bacteriological examinations carried out on behalf of the Health Department of the Newcastle Corporation, at the Public Health Laboratory (University of Durham College of Medicine), Armstrong College.

A total of 8,153 specimens were submitted for examination. The nature of the investigations and the results obtained are given under the various sections as follows:

BACTERIOLOGICAL EXAMINATIONS :—

	DIPHTHERIA.			PHTHISIS.			SWABS FOR HAEMOLYTIC STREPTOCOCCI.		
	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.
No. of Ex- aminations	1,979	154	1,825	990	149	841	54	25	29
Percentage positive	..	7·8	..	..	15·0	..	..	46·3	..

AGGLUTINATION REACTIONS :—

	Agglutination Tests for the Enteric Fevers.			Agglutination Tests against Brucella Abortus and Brucella Melitensis.		
	Total.	Positive.	Negative.	Total.	Positive.	Negative.
No. of Exami- ations	264	*102	162	9	..	9

* Of these positive results:—

34 agglutinated *B. typhosus*.

15 „ *B. paratyphosus* A.

53 „ *B. paratyphosus* B.

MILK EXAMINATIONS:—

	Total.	Found.	Not Found.	Percentage positive.
1. For the tubercle bacilli by animal inoculation:—	377	16	361	4·2

2. Bacterial content of organisms other than the tubercle bacillus (the colon bacillus being taken as the indicator):—

Colon bacilli not found in 1·0 cc. or less	11
Colon bacilli found in 1·0 cc., but not in less	50
Colon bacilli found in 0·1 cc., but not in less	36
Colon bacilli found in 0·01 cc., but not in less	26
Colon bacilli found in 0·001 cc., but not in less	20
Colon bacilli found in 0·0001 cc., but not in less....	21
Colon bacilli found in 0·00001 cc., but not in less..	24
	—
	188
	—

3. The following samples of milk were also examined for the bacillus coli content, the samples being taken during the various stages of pasteurisation:—

Colon bacilli not found in 1·0 cc. or less.....	19
Colon bacilli found in 1·0 cc. but not in less	20
Colon bacilli found in 0·1 cc., but not in less.....	16
Colon bacilli found in 0·01 c.c, but not in less.....	20
Colon bacilli found in 0·001 cc., but not in less	11
Colon bacilli found in 0·0001 cc., but not in less....	6
Colon bacilli found in 0·00001 cc., but not in less....	10
	—
	102
	—

4. The following samples of milk were examined for the bacillus coli content, the samples being taken before and after boiling (for use in the preparation of ice cream):

Colon bacilli not found in 1·0 cc. or less.....	2
Colon bacilli found in 1·0 cc., but not in less.....	1
Colon bacilli found in 0·01 cc., but not in less.....	1
Colon bacilli found in 0·0001 cc., but not in less ...	1
Colon bacilli found in 0·00001 cc., but not in less	1
	<hr/>
	6
	<hr/>

5. The following samples of ice cream were examined for the bacillus coli content:—

Colon bacilli not found in 1·0 cc. or less	2
Colon bacilli found in 1·0 cc., but not in less	2
Colon bacilli found in 0·1 cc., but not in less	5
Colon bacilli found in 0·01 cc., but not in less.....	3
Colon bacilli found in 0·001 cc., but not in less	2
Colon bacilli found in 0·0001 cc., but not in less....	3
Colon bacilli found in 0·00001 cc., but not in less..	7
	<hr/>
	24
	<hr/>

6. 187 samples of “ Graded Milk ” were examined during the year in accordance with the scheme of the Ministry of Health under the Milk and Dairies (Amendment) Act, 1922, and Milk (Special Designations) Order, 1923. The following results were obtained:—

	Satisfied the Test.	Failed to satisfy the test.
“ Certified ” Milk	40	11
“ Grade A ” Milk (T.T.)	116	20
	<hr/>	<hr/>
	156	31
	<hr/>	<hr/>

WATER EXAMINATIONS :—

(i.) *Routine Samples.*

Class I. (Colon bacilli not found in 100 cc. or less).....	128
Class II. (Colon bacilli found in 100 cc. but not in less)	28
Class III. (Colon bacilli found in 10 cc. but not in less)	21
Class IV. (Colon bacilli found in 1 cc. but not in less) ..	3
	<hr/>
	180
	<hr/>

(ii.) During the month of July, 26 samples of water were examined from the several Corporation Swimming Baths in the City, and the following is a summary of the results obtained :—

Colon bacilli not found in 100·0 cc. or less	17
Colon bacilli found in 100·0 cc., but not in less	5
Colon bacilli found in 10·0 cc., but not in less	1
Colon bacilli found in 1·0 cc., but not in less	2
Colon bacilli found in 0·1 cc., but not in less	1
	<hr/>
	26
	<hr/>

(iii.) In addition to the above the undermentioned samples of drinking water were examined and detailed results were furnished at the time : —

From various sources at Barras-	
ford Sanatorium	18 samples.
From other sources.....	2 „

(iv.) During the month of September 23 samples of water (the washings from milk machines) were examined, and the following results obtained :—

Colon bacilli found in 100·0 cc., but not in less	3
Colon bacilli found in 10·0 cc., but not in less	9
Colon bacilli found in 1·0 cc., but not in less	5
Colon bacilli found in 0·1 cc., but not in less	2
Colon bacilli found in 0·01 cc., but not in less	3
Colon bacilli found in 0·001 cc., but not in less	1
	<hr/>
	23
	<hr/>

VENEREAL DISEASES :—

	Serological reactions.	Microscopical examinations.	Total.
From Treatment Centres	1,221	..	1,221
From Private Practitioners ...	1,618	189	1,807
TOTAL	2,839	189	3,028

OTHER EXAMINATIONS :—

(a) **Diphtheria.**—In addition to the daily examinations, virulence tests for suspected diphtheria bacilli from throats were carried out in 11 cases :—

6 cases proved virulent.
 3 cases proved non-virulent, and in
 2 cases no diphtheria bacilli were isolated.

(b) **Enteric Fevers.**—The following specimens of fæces were received and examined for organisms of the enteric group :—

From the City Infectious Diseases Hospital	260 specimens
From the City Health Department	27 „
From the Newcastle General Hospital (commencing 1st April, 1930)	24 „
Other sources.....	6 „
	—
	317 „
	—

In this total of 317, 110 were positive and 207 were negative.

Typhoid bacilli being isolated..... 30 times.
 B. paratyphoid bacilli being isolated.... 30 „

Other organisms isolated were :—

B. Morgan No. 1 33 „
 B. pyocyaneous 5 „
 B. paracolon 15 „
 B. fæcalis alkaligenes 4 „
 Late lactose fermenting bacilli 4 „
 Non-lactose fermenting bacilli 6 „

The following specimens of urine were received and examined for organisms of the enteric group, all of which were negative :—

From the City Infectious Diseases Hospital 2
 From the City Health Department..... 16
 —
 18
 —

(c) **Bacillary Dysentery.**—Examination of fæces for dysentery bacilli from suspected cases has been continued throughout the year, and as previously done, one specimen was submitted after the patient was convalescent to determine freedom from infection before discharge from hospital.

The following results were obtained :—

	From City Infectious Diseases Hospital.	From City Health Depart- ment.	From New- castle General Hospital (From 1st April, 1930).	From other Sources.	Total Speci- mens.
Total	253	18	35	13	319
Positive.....	77	4	13	2	96
Negative	176	14	22	11	223
Flexner Bacilli	49	1	7	2	59
Sonne Bacilli	27	3	5	..	35
Newcastle Dysentery Bacillus	1	..	..	..	1
B.Enteriditis Newport..	..	..	1	..	1
	77	4	13	2	96

The following is a list of the types of Flexner bacilli obtained:—

	V.	W.	X.	Y.	Z.	Atypical Dysentery Bacilli.	Total.
<i>From—</i>							
City Infectious Diseases Hospital	33	1	..	13	2	49
City Health Department	1	..	..	..	..	1
Newcastle General Hospital	..	5	2	..	..	..	7
Other Sources	2	..	2
Total	39	3	..	15	2	59

A paper on Bacillary Dysentery in Great Britain was read to the Society of Medical Officers of Health at the meeting on February 20th, 1931, by Dr. J. A. Charles and Dr. S. H. Warren. This paper was published in "Public Health" for May, 1931.

(d) **Amœbic Dysentery.**—Four specimens of fæces were received and examined for amœbic dysentery: two were found positive and two were negative.

(e) **Miscellaneous.**—The following specimens were also received and reports furnished:—

- 12 specimens of cerebro-spinal fluid.
- 4 cultural examinations of blood.
- 5 specimens of sera for B. dysenteriae group.
- 1 specimen of sputum for inoculation test.
- 1 specimen of pleural fluid for inoculation test.
- 1 specimen of urine for inoculation test.
- 1 specimen of urine for cultural examination.
- 1 specimen of urine for microscopical examination.
- 1 specimen of pus from chest for cultural examination.

The following table gives a complete summary of the various examinations, including the year 1929 for comparison :—

Nature of Investigation.	1929.	1930.
Throat Swabs for B. Diphtheria.....	1,634	1,979
Sputa for Tubercle Bacilli	699	990
Swabs for Hæmolytic Streptococci	155	54
Agglutination Tests :—		
Against the Enteric Fevers	93	264
Against Brucella Abortus	13	9
Milk Examinations :—		
For the Tubercle Bacillus	377	377
For Bacillus Coli	190	188
Graded Milk	184	187
Special Examinations	13	108
Ice Cream .....	..	24
Water Examinations :—		
For Bacillus Coli	184	180
For Complete Examination	24	46
Other Examinations .....	..	23
Venereal Diseases	2,833	3,028
Other Examinations :—		
Diphtheria Virulence Tests	5	11
Enteric Fevers—Fæces	117	317
Urine	3	18
Bacillary Dysentery	414	319
Amœbic Dysentery .....	..	4
Food-poisoning	1	..
Post-mortem Specimens.....	3	..
B. Anthracis	3	..
Miscellaneous	22	27
Total	6,967	8,153

(Signed) S. H. WARREN, M.R.C.S. (Eng.), D.P.H. (Lond.).

Director, Public Health Laboratory.

University of Durham College of Medicine,

Newcastle upon Tyne,

30th April, 1931.

REPORTS OF THE
TUBERCULOSIS MEDICAL OFFICER
AND
MEDICAL SUPERINTENDENT,
BARRASFORD SANATORIUM.

IV.—TUBERCULOSIS.

TUBERCULOSIS DISPENSARY.
BARRASFORD SANATORIUM.

TUBERCULOSIS.

Report of the Tuberculosis Medical Officer.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to submit, herewith, my report on the work of the Tuberculosis Section for the year 1930.

The number of attendances at the Dispensary shows an increase of 79 over the figures for 1929.

The number of new cases notified, also the pulmonary and non-pulmonary death rates, are the lowest recorded.

During the past two years there has been an increase in the number of pulmonary cases on the Dispensary Register (Table IV., 37/T.), so that while the present death rate is very low, it is likely to show a rise in the near future.

The new ward block at the Sanatorium Pavilions, City Hospital for Infectious Diseases, Walker Gate (Sanatorium Pavilion 2) has been continuously occupied by 44 females and has proved a most satisfactory addition to the Hospital. The ward kitchen of this pavilion has now been re-built and enlarged, and is all that can be desired. The grounds surrounding the ward have been laid out and planted.

On the 1st April, 1930, Wingrove Hospital was transferred from the Board of Guardians to the Corporation and re-named Newcastle General Hospital. All the cases of pulmonary tuberculosis in this hospital were transferred to the Sanatorium Pavilions, Walker

Gate, at this date, and 52 beds became available for the treatment of non-pulmonary tuberculosis in the Newcastle General Hospital. Arrangements were also made about this time to commence the use of the thoracoscope and cautery in connection with artificial pneumothorax therapy. This has been made possible through the co-operation of a surgeon at the Newcastle General Hospital, and will be dealt with in detail in my next Annual Report.

There has been no outstanding alteration in the methods of diagnosis, but more and more reliance has been placed upon a satisfactory X-ray picture of the chest. Lipiodol, which is an oil containing iodine and opaque to the X-rays, has been used in several cases. It is injected into the trachea and gives valuable evidence about the chest. The operation is comparatively trivial, and causes no discomfort to the patient.

As mentioned above, X-ray work continues to be invaluable, both in diagnosis and artificial pneumothorax therapy, and it is very much regretted that motives of economy caused the postponement for a year of the proposal to install an X-ray machine at the Tuberculosis Dispensary. The provision of this apparatus is necessary if your Committee wish to keep the work of the tuberculosis section up-to-date. The present arrangements have existed since 1925, and, as explained in my last Annual Report, are not satisfactory. They involve delay and inconvenience to patients; furthermore, the waiting and dressing room facilities for patients of both sexes at the Sanatorium Pavilion, Walker Gate, are not adequate, and are of a very unsatisfactory nature. It is sincerely hoped that during the coming year the Committee will re-consider the matter in all its aspects.

During the year all the nursing staff of the City Hospital for Infectious Diseases, Walker Gate, and the domestics employed in the Sanatorium Pavilions, have been X-rayed. This has involved the exposing of 92 films. This figure is not included in the number of X-ray films taken in connection with this Department. One nurse was found to be tuberculous, and the films of the remainder are available as valuable records if, at any time, chest trouble is suspected. This work is a new departure, and is of considerable value.

No action was necessary under the Public Health Act of 1925 (Compulsory Removal of Patients to Hospital), nor under the Public Health (Prevention of Tuberculosis) Regulations, 1925, dealing with milk.

There have been no changes in the staff of the Dispensary. I wish to acknowledge their loyal assistance and interest in the work.

Yours faithfully,

GEORGE HURRELL, M.D., D.P.H.,

Tuberculosis Medical Officer.

30th May, 1931.

REPORT.

Notifications.—792 notifications were received during the year but some were duplicates, so that the total number of new cases was 719, of whom 507 were certified to be suffering from “pulmonary” and 212 from “non-pulmonary” tuberculosis.

The details as regards sex and age are given in the accompanying table.

SUMMARY OF NOTIFICATIONS DURING THE PERIOD, 1ST JANUARY TO 31ST DECEMBER, 1930.

AGE PERIODS.	Number of Notifications on Form "B."												Number of Notifications on Form "C."		Number of Notifications on Form "D."				
	Primary Notifications.												Poor Law Institutions.	Sanatoria.	Poor Law Institutions.	Sanatoria.			
	Total Notifications (including Cases previously notified by other doctors).																		
	0 to 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 and upwards.	TOTAL.	Under 5.	5 to 10.	10 to 15.	TOTAL.			
Pulmonary— Males	1	10	13	10	32	37	56	45	46	30	15	295	318	During the year the School Medical Officers referred all suspicious cases to the Tuberculosis Medical Officer.					
Females .....	..	5	14	13	36	37	46	34	15	6	6	212	228	22	13	328	23	11	168
Non-Pulmonary— Males	3	20	27	20	12	12	5	7	3	6	..	115	133	19	13	13	18	11	11
Females	5	9	22	19	15	6	9	5	1	3	3	97	113	23	11	11	17	8	8
TOTALS.....	9	44	76	62	95	92	116	91	65	45	24	719	792	77	558	558	69	419	419

Form "A."—Notification by any Medical Practitioner of a case of Tuberculosis (whether at an Institution or otherwise).

Form "B."—Notification by School Medical Officers of cases of Tuberculosis in children attending Public Elementary Schools of which he has become aware in the course of inspection.

Form "C."—Notification by the Medical Officers of Poor Law Institutions and Sanatoria of persons admitted who are suffering from Tuberculosis.

Form "D."—Notification by the Medical Officers of Poor Law Institutions and Sanatoria of persons discharged who are suffering from Tuberculosis.

"Primary Notifications" are all new cases coming to the knowledge of the Medical Officer of Health during the year, whether on Form "A" or from other sources.

As far as possible every notified case is visited by the nurses and urged to visit the Dispensary for examination and classification with a view to treatment.

Of the 719 cases notified, 535 attended the Dispensary and 90 others were visited in their homes by the Health Visitors in the course of the year. The names of the patients certified to have died from tuberculosis, but not previously notified, are entered in the notification register, so that if the 40 patients in this category, and 30 who died within one week of notification, and were not known to the Dispensary, be deducted, it will be seen that the Dispensary gets into touch with most of the known cases of tuberculosis.

With reference to the 24 cases neither examined at the Dispensary nor visited by the nurses, some were living in institutions, or common lodging houses, and others did not wish to be visited.

A table has been prepared to illustrate these points, and also to show the nature of the institutional treatment afforded to the cases notified during 1930. While 325 of the 507 patients notified as suffering from pulmonary tuberculosis were treated in beds belonging to, or controlled by the City Council, it is particularly noteworthy that only 68 out of a total of 212 patients notified as suffering from forms of tuberculosis other than pulmonary were treated in such beds.

The number of patients dying in the year of notification is also given, and it will be seen that 26 per cent. of all the new cases died in the same year as they were notified.

NOTIFICATIONS OF TUBERCULOSIS DURING 1930.

Part Affected.	Notifi- cations.	Attended Dispensary.	Visited by Nurse but not attended Dispensary.	Received Institutional Treatment.					Died during the Year.
				Barras- ford Sana- torium.	Sanat. Pav. Walker Gate.	Stann- ington Sana- torium.	New- castle Gen. Hosp.	Totals.	
Pulmonary—									
Male	295	237	30	48	132	4	..	184	76
Female	212	168	25	32	105	4	..	141	56
Non-Pulmonary—									
(Male)	115	73	20	..	1	8	25	34	22
(Female) ...	97	57	15	..	..	5	29	34	31
TOTALS	719	535	90	80	238	21	54	393	185

The figures for Newcastle General Hospital are from 1st April, 1930.

Cases re-admitted to the Sanatorium Pavilions, Walker Gate, and those transferred to Barrasford Sanatorium during the year, are counted as only receiving treatment on one occasion.

During the year 204 cases (over 28 per cent. of the total) were notified by the Dispensary Medical Staff.

Non-notified deaths from pulmonary tuberculosis were 16, equal to 5·4 per cent. of deaths.

Non-notified deaths from non-pulmonary tuberculosis were 24, equal to 35·8 per cent. of deaths.

Practitioners were written to by the Medical Officer of Health when notification appeared to have been neglected.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1924.

NUMBER OF CASES OF TUBERCULOSIS REMAINING ON THE NOTIFICATION REGISTER
AT END OF YEAR.

Year.	PULMONARY.			NON-PULMONARY.			Total Cases.
	Males.	Females.	Total.	Males.	Females.	Total.	
1925.....	855	608	1,463	340	312	652	2,115
1926.....	744	515	1,259	297	263	560	1,819
1927.....	644	441	1,085	236	204	440	1,525
1928.....	720	443	1,163	294	254	548	1,711
1929.....	744	501	1,245	319	270	589	1,834
1930.....	737	495	1,232	316	264	580	1,812

Deaths.—431 deaths were registered as due to some form of tuberculosis, and of these 306 were certified as due to pulmonary tuberculosis and 125 to other forms of the disease.

On these figures the death rates per 1,000 population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	306	1·08
Non-Pulmonary Tuberculosis	125	0·44
	<hr/>	<hr/>
Total Tuberculosis Death Rate (uncorrected) ...	431	1·52
	<hr/>	<hr/>

It must be noted, however, that 18 residents of Newcastle died in other parts of the United Kingdom from tuberculosis (15 pulmonary ; 3 non-pulmonary), while 84 of the deaths (23 pulmonary ; 61 non-pulmonary) registered in Newcastle were those of temporary residents.

The corrected deaths and death rates per 1,000 of the population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	298	1·05
Non-Pulmonary	67	0·24
	<hr/>	<hr/>
All forms of Tuberculosis (corrected)	365	1·29
	<hr/>	<hr/>

The details as regards sex and age, together with the form of the disease, are given in the accompanying table :—

DEATHS FROM TUBERCULOSIS.—Sex and Age Distribution.

	Under 1 year.		1 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 and upwards		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Respiratory System	1	1	1	1	2	3	13	17	23	18	46	31	32	28	31	10	21	9	5	5	175	123
Central Nervous System	2	1	2	3	4	3	3	2	..	3	1	1	..	..	..	..	..	..	..	..	..	12	13
Intestines and Peritoneum .....	..	..	3	..	..	1	..	..	1	..	4	2	1	2	..	..	1	..	1	..	..	11	5
Vertebral Column.....	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	1	..	2	1
Bones and Joints .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
Other Organs .....	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	1	..	2	3
Disseminated	2	..	..	..	..	3	2	2	1	3	1	..	..	..	3	..	..	..	..	..	..	7	10
Totals	3	3	5	4	5	8	7	7	16	23	29	21	48	33	36	28	33	10	22	12	5	7	209	156

87 per cent. of the pulmonary cases were known to the dispensary staff, 238 having visited the dispensary and an additional 24 having been attended in their homes by the visiting nurses.

38·8 per cent. of the “non-pulmonary” were attended at or from the dispensary. The proportion is much too low; the main reason is that 35·8 per cent. of the non-pulmonary cases were not notified before death (see later).

Of 298 deaths from pulmonary tuberculosis the diagnosis was verified bacteriologically in 224 instances, *i.e.*, 75 per cent.

10 other dispensary patients who were known to be suffering from pulmonary tuberculosis, and in whose sputum tubercle bacilli had been found, died during the year. The cause of death being registered as: Nephritis 1; General Tuberculosis 2; Miliary Tuberculosis 1; Tuberculosis of Peritoneum 1; Bronchitis 1; Cardiac Disease 1; Pleurisy 1; Suicide 2.

Duration of Illness.—Wherever possible, in pulmonary cases, enquiry was made as to the length of time the deceased had been ill, and the average duration of illness was found to be 44 months. As in previous years, important differences were discovered when age and sex were considered, the figures being 50·3 months for adult males, 35·9 months for adult females, and 13·7 months for those below 15 years of age (both sexes).

The period between notification and death was, as one would expect, longer in the adult males than in the adult females and children, but averaged 23·5 months for all cases.

As the duration of illness for all cases was 44 months, each patient who died during the year must, on the average, have been ill over 20 months before notification.

30·9 per cent. of the patients had either not been notified prior to death (5·4 per cent.), or died within 3 months of notification (25·8 per cent.).

Further details and comparative figures for previous years are submitted in the following table :—

RETURN OF DEATHS FROM PULMONARY TUBERCULOSIS OCCURRING IN :—

	Deaths which occurred in these years.								
	Average for 1913—17.	Average for 1918—22.	Average for 1923—27.	1928	1929	1930.			
						M.	F.	C.	Total.
Persons not notified	43	51	33	21	23	7	8	1	16
„ notified under 1 mth.	35	47	50	43	40	21	14	2	37
„ between 1 and 3 „	94	48	44	58	49	26	16	2	44
„ between 3 and 6 „	53	30	38	30	39	25	15	..	40
Total under 6 months	226	183	166	152	151	79	53	5	137
Persons notified between									
6 and 12 months	47	46	40	28	32	12	25	2	39
„ 12 and 18 „ ..	28	21	25	23	15	15	14	1	30
„ 18 and 24 „ ..	15	15	17	23	23	5	3	1	9
„ 2 and 3 years ...	20	18	22	17	25	14	6	..	20
„ over 3 years ...	21	47	53	52	63	46	17	..	63
TOTALS	357	331	324	295	309	171	118	9	298

The figures for non-pulmonary forms of tuberculosis were even worse, for in 24 instances out of the 67 deaths, the disease had not been notified prior to death.

The records show that 8 of the 16 fatal unnotified cases of pulmonary tuberculosis, and 14 of the 24 fatal unnotified cases of non-pulmonary tuberculosis, died in hospitals ; included in the 14 “ other forms ” were 4 cases of tuberculous meningitis.

Occupation.—The nature of the work done and the conditions under which it is carried on have an important bearing on the incidence of disease, and probably account for the excess of adult male over adult female deaths from pulmonary tuberculosis.

165 “insured persons” (127 males and 38 females) are included in the 298 deaths.

Family History.—In 92 instances amongst the 275 cases of pulmonary tuberculosis known to the Dispensary who died during the year, *i.e.*, in 33·5 per cent., there was a history that some near relation was suffering from, or had died of pulmonary tuberculosis. The figures were 32 per cent. for males, and 36 per cent. for females.

House Accommodation.—The home conditions of the working classes are intimately associated with occupation and family history as predisposing to tuberculosis. The numbers of rooms in the dwellings occupied by the above 275 persons were as follows:—

Rooms in Dwelling.	1	2	3	4	More than 4	Common Lodging Houses.	Not Known.	Total.
Deaths	31	75	71	66	25	6	1	275

As regards the type of house occupied 149 were flats, 80 tenements, 39 self-contained, 6 were common lodging houses, and in 1 case the particulars were not known.

Treatment in Institutions.—It is noteworthy that of the 248 patients suffering from pulmonary tuberculosis who attended the Dispensary and died in 1930, 212, or 85·5 per cent., had received institutional treatment on one or more occasions. This is a high percentage,

and shows what a large proportion of the cases visiting the Dispensary avail themselves of the accommodation provided.

Ward Distribution.—As in previous years a table is presented to show the ward distribution of tuberculosis during 1930. The estimated population of each ward is given, together with the number of notifications and deaths, and the rates per thousand living.

The following table shows the number of positive cases living in one, two, three, four, and more than four roomed houses, and also the total number of persons living under these conditions. It will be seen that the largest number of cases occur in two and three roomed houses. This point, in conjunction with the ward distribution of the disease, emphasises the necessity of improving the homes of the people in order to stamp out tuberculosis.

Housing Conditions of Sputum Positive Cases.

Holding.	Number of Cases.	Number of Persons.	Average number of persons to one Room.
1 Room	58	171	2.95
2 Rooms	149	637	2.14
3 Rooms	178	821	1.54
4 Rooms	149	721	1.21
More than 4 Rooms	109	530	0.97
Common Lodging Houses	7	..	..
Not Known	11	..	..
TOTALS	661	2,887	1.42

In 21 instances there were 2 cases in one house.

WARD DISTRIBUTION OF TUBERCULOSIS, 1930.

WARD.	Population 1930.	NOTIFICATIONS.						DEATHS.					
		Pulmonary	Attack rate per 1,000 of population.	Non- Pulmonary	Attack rate per 1,000 of population.	TOTAL.	Attack rate per 1,000 of population.	Pulmonary	Death rate per 1,000 of population.	Non- Pulmonary	Death rate per 1,000 of population.	TOTAL.	Death rate per 1,000 of population.
St. Nicholas'	2,702	8	2.96	..	0.44	8	2.96	6	2.22	1	0.37	7	2.59
St. Thomas'	13,654	8	0.58	6	0.44	14	1.02	6	0.44	2	0.15	8	0.59
St. John's	15,082	23	1.53	15	0.99	38	2.52	16	1.06	8	0.53	24	1.59
Stephenson	18,414	35	1.90	19	1.03	54	2.93	23	1.25	5	0.27	28	1.52
Armstrong	15,349	37	2.41	10	0.65	47	3.06	9	0.59	4	0.26	13	0.85
Elswick	12,531	16	1.27	5	0.40	21	1.67	9	0.72	3	0.24	12	0.96
Westgate	15,002	22	1.46	12	0.80	34	2.26	16	1.06	3	0.20	19	1.26
Arthur's Hill	11,252	19	1.69	5	0.44	24	2.13	9	0.80	1	0.09	10	0.89
Benwell	18,225	34	1.87	17	0.93	51	2.80	16	0.88	6	0.33	22	1.21
Fenham	18,034	36	1.99	11	0.61	47	2.60	17	0.94	2	0.11	19	1.05
All Saints'	17,384	43	2.47	21	1.21	64	3.68	24	1.38	5	0.29	29	1.67
St. Andrew's	11,631	31	2.66	11	0.95	42	3.61	14	1.20	3	0.26	17	1.46
Jesmond	10,991	3	0.27	2	0.18	5	0.45	..	..	1	0.09	1	0.09
Dene	15,871	21	1.32	4	0.25	25	1.57	13	0.82	3	0.19	16	1.01
Heaton	15,230	20	1.31	6	0.39	26	1.70	10	0.66	1	0.06	11	0.72
Byker	17,182	29	1.69	16	0.93	45	2.62	21	1.22	4	0.23	25	1.45
St. Lawrence	17,607	44	2.50	20	1.13	64	3.63	33	1.87	7	0.40	40	2.27
St. Anthony's	15,500	29	1.87	14	0.90	43	2.77	25	1.61	3	0.19	28	1.80
Walker	21,759	49	2.25	18	0.83	67	3.08	31	1.42	5	0.23	36	1.65
City	283,400	507	1.78	212	0.75	719	2.53	298	1.05	67	0.24	365	1.29
													1,229

NOTE.—Deaths occurring in Public Institutions have been allocated in every case to the Wards in which they resided.

The Tuberculosis Dispensary.

The number of cases who attended the Dispensary for the first time was 1,053. In addition, there were 176 cases who had been discontinued previous to the year 1930, who returned for examination, and are also counted as new cases in accordance with instructions in Memo. 37/T., making a total of 1,229.

540 of these were sent by general practitioners, 302 were referred to the Dispensary by the Visiting Nurses, 116 by the Newcastle-upon-Tyne Dispensary, 48 by the Royal Victoria Infirmary, 40 by the School Medical Officer, 47 by the Tuberculosis Medical Officer, 60 by the Medical Staff of the Newcastle upon Tyne General Hospital, 51 came of their own accord, and smaller numbers from other sources.

406 had been notified previously, and the balance, 823, of whom 204 were notified by the Dispensary Medical Staff, were suspects, or contacts of known cases. Of the last mentioned category 224 had lived with patients known to have tubercle bacilli in their sputum, 40 with patients who had not tubercle bacilli in their sputum, and 64 were home contacts of persons certified to have died of pulmonary tuberculosis. The following table gives the details of the new cases, including contacts:—

NEW CASES EXAMINED, INCLUDING CONTACTS, DURING THE YEAR 1930.

(Table I., Sect. A. & B., Memo. 37/T.).

Diagnosis.	Males.		Females.		Totals.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis	197	11	124	11	343
Non-Pulmonary Tuberculosis .	23	25	18	29	95
*Diagnosis not completed after one month's observation . . .	67	65	76	51	259
Non-Tuberculous	172	105	156	99	532
TOTALS	459	206	374	190	1,229

* 37 of these were subsequently diagnosed as tuberculosis.

In respect of these new patients, after observation it was found that 61 per cent. were not suffering from active tuberculosis.

503 were “insured persons,” and 593 were dependents of “insured persons,” leaving only 133 of the uninsured classes.

Of the 176 cases who had been discontinued previous to the year 1930, and returned for examination, 29 were found to be suffering from tuberculosis. Details of these cases are given in the table which follows :—

CASES DISCONTINUED IN PREVIOUS YEARS, AND RETURNED DURING THE
YEAR 1930. (INCLUDED IN PREVIOUS TABLE.)

Diagnosis.	Males.		Females.		Totals.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis	12	1	7	..	20
Non-Pulmonary Tuberculosis	3	1	3	2	9
Not Tuberculous	51	23	44	29	147
Totals	66	25	54	31	176

The Tuberculosis Medical Officer visited 75 patients in their homes.

2,352 persons visited the dispensary during the course of the year, and registered 7,132 attendances, an average of over 3 per patient.

The total number of complete physical examinations made was 2,061, including 829 males, out of 3,013 attendances ; 652 females, out of 2,147 attendances ; and 580 children out of 1,972 attendances ; giving an average of approximately 1 every 3 visits for adults and children.

In 33·5 per cent. of the cases attending the Dispensary, tubercle bacilli were found in the sputum ; 48·5 per cent. of the males, 40·9 per cent. of the females, and only 3·5 per cent. of those under 15 years of age. The details are tabulated below :—

	Number of Patients and Cases who attended the Dispensary during the Year 1930.			
	Total.	Males.	Females.	Under 15 years of age.
“ Sputum Positive Cases ”	789	476	290	23
“ Negative Cases ”	1563	505	419	639
Totals	2352	981	709	662

Sputum Positive Patients.—The number of living sputum positive patients on the Dispensary Register on January 1st, 1930, was 638 ; during the year 144 of these died, and also 69 patients in whose sputa tubercle bacilli were found in the course of the year. In addition 56 patients were written off the Dispensary Register (13 cured, 43 left the district.)

292 patients were added to the register, making a total at the end of the year of 661, consisting of 398 males, 241 females and 22 children. 591 of these patients visited the Dispensary during the year. Of the 70 who failed to attend 56 were reported by the nurses to be working or fit for work ; 5 were moderately well, while 9 had relapsed, and were mostly confined to bed ; In 8 instances sanatorium treatment had been refused, but 59 patients had been treated at Barrasford Sanatorium, or the Sanatorium Pavilions, Walker Gate.

“ **Negative Cases.** ”—The records of the patients in respect of whom no tubercle bacilli have been found in the sputum, together with non-pulmonary patients and suspects, are filed separately from those of the sputum positive patients, and 1,563 cases in these categories attended during the year. This number included 505 adult males, 419 adult females, and 639 children. The preponderance of male cases was nothing like so pronounced as in the sputum positive group, and it is noteworthy that children were much more numerous, constituting 41 per cent. of the total, as opposed to 2·9 per cent. of the bacteriologically verified cases. The majority of these “ negative cases ” were “ suspects ” or “ contacts. ”

1,074 cases were removed from the Dispensary Register, and included 56 patients with bacilli in sputum. The details are given in the following table :—

CASES AND PATIENTS WRITTEN OFF THE DISPENSARY REGISTER
DURING THE YEAR 1930.

(Table I., Sect. C., Memo. 37/T.)

DIAGNOSIS.	MALES.		FEMALES.		TOTALS.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis, Cured	23	12	..	1	36
Non-Pulm. Tuberculosis, Cured	8	6	18	3	35
Non-Tuberculous.....	259	186	245	160	850
Left district, lost sight of, or will not attend Dispensary ..	63	17	56	17	153
TOTALS	353	221	319	181	1,074

The number of patients and cases on the Dispensary Register at the end of the year are tabulated below :—

NUMBER OF CASES AND PATIENTS ON DISPENSARY REGISTER
AT END OF YEAR 1930.

(Table I., Sect. D., Memo. 37/T.)

DIAGNOSIS.	MALES.		FEMALES.		TOTAL.
	Over 15 yrs.	Under 15 yrs.	Over 15 yrs.	Under 15 yrs.	
Pulmonary Tuberculosis (T.B. in Sputum)	398	10	241	12	661
Pulmonary Tuberculosis (no T.B. in Sputum)	163	31	94	26	314
Non-Pulmonary Tuberculosis.	107	124	83	100	414
Diagnosis Not Completed	33	40	30	40	143
Totals	701	205	448	178	1,532

The two tables which follow are self-explanatory, and are required by the Ministry of Health under Memo. 37/T.

MEMO. 37/T. TABLE IV. PULMONARY TUBERCULOSIS.

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ANNUAL RETURN SHOWING IN SUMMARY FORM THE CONDITION OF ALL PATIENTS WHOSE CASE RECORDS WERE IN POSSESSION OF THE DISPENSARY
AT THE END OF 1930, ARRANGED ACCORDING TO THE YEARS IN WHICH THE PATIENTS FIRST CAME UNDER PUBLIC MEDICAL TREATMENT.

Condition at the time of the last Record made during the year to which the Return relates.		Previous to 1926.				1926.				1927.				1928.				1929.				1930.										
		Class T.B. minus.	Class T.B. plus.			Class T.B. minus.	Class T.B. plus.			Class T.B. minus.	Class T.B. plus.			Class T.B. minus.	Class T.B. plus.			Class T.B. minus.	Class T.B. plus.			Class T.B. minus.	Class T.B. plus.									
			Group 1.	Group 2.	Group 3.		Total (Class T.B. plus).	Group 1.	Group 2.		Group 3.	Total (Class T.B. plus).	Group 1.		Group 2.	Group 3.	Total (Class T.B. plus).		Group 1.	Group 2.	Group 3.		Total (Class T.B. plus).	Group 1.	Group 2.	Group 3.	Total (Class T.B. plus).					
ALIVE.	Discharged as Cured—																															
	Adults—Male	45	..	..	..	71	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Female ..	23	..	..	..	33	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Children—Male	5	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Female ..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Disease Arrested—																															
	Adults—Male	17	8	8	1	17	5	..	3	..	3	6	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Female ...	2	3	5	1	9	4	..	..	..	..	4	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Children—Male	6	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Female ..	5	..	2	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Disease not Arrested—																															
	Adults—Male	12	35	48	24	107	3	4	11	2	17	5	3	14	8	25	10	3	49	3	55	33	2	46	12	60	51	6	54	45	105	
	Female ...	11	13	32	8	53	3	..	9	3	12	8	1	6	5	12	4	3	21	1	25	21	5	31	9	45	27	1	43	28	72	
	Children—Male	9	..	4	2	6	1	1	1	5	..	2	..	2	1	..	3	..	3	9	..	3	..	3	12	..	1	3	4	4
	Female ..	5	3	7	1	11	2	1	1	1	2	..	1	1	2	6	..	5	..	5	12	1	1	2	4	4
Lost sight of, or otherwise removed from Dispensary Register		16	..	..	..	123	12	3	16	2	21	24	1	10	5	16	13	1	7	2	10	12	..	13	5	18	6	..	4	1	5
DEAD—Adults—Male ..		23	..	..	..	219	8	2	44	40	86	14	2	32	45	79	6	..	36	32	68	13	..	19	42	61	6	..	9	37	46
Female ..		12	..	..	..	120	6	4	33	49	86	8	..	23	25	48	1	..	15	26	41	7	..	27	33	60	9	..	8	14	22
Children—Male ...		1	..	..	..	3	1	..	1	1	2	..	..	..	2	2	..	..	..	..	..	1	..	..	..	..	..	..	..	1	1
Female ..		..	..	..	..	6	3	..	1	7	8	..	..	..	4	4	2	..	3	1	4	2	..	3	3	6	..	..	..	..	..
TOTALS		199	62	106	37	782	51	14	118	104	236	76	7	87	95	189	47	7	135	66	208	104	7	147	104	258	123	8	120	131	259	

NON-PULMONARY TUBERCULOSIS.

ANNUAL RETURN SHOWING IN SUMMARY FORM THE CONDITION OF ALL PATIENTS WHOSE CASE RECORDS WERE IN POSSESSION OF THE DISPENSARY AT THE END OF 1930, ARRANGED ACCORDING TO THE YEARS IN WHICH THE PATIENTS FIRST CAME UNDER PUBLIC MEDICAL TREATMENT.

Condition at the time of the last Record made during the year to which the Return relates.		Previous to 1926.					1926.					1927.					1928.					1929.					1930.				
		Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.	Bones and Joints.	Abdominal.	Other Organs.	Peripheral Glands.	Total.
ALIVE.	Discharged as Cured—																														
	Adults—Male .....	..	..	..	..	19	..	1	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Female .....	..	..	..	..	17	..	..	..	4	4	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Children—Male .....	..	..	..	..	36	2	1	..	..	3	1	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Female .....	..	..	..	..	11	1	..	1	2	4	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Diseases Arrested—																														
	Adults—Male	1	..	..	2	3	1	1	..	..	2	1	..	..	3	4	..	1	..	1	2	..	..	..	..	..	..	..	..	..	..
	Female	2	1	..	..	3	..	..	..	..	..	2	..	..	2	4	..	2	..	..	2	..	1	..	..	..	..	..	..	..	..
	Children—Male	4	1	2	2	9	..	..	..	2	2	1	1	..	2	4	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..
	Female	3	..	1	2	6	1	..	..	2	3	..	1	..	2	3	..	..	..	4	4	..	..	..	..	..	..	..	..	..	..
	Disease not Arrested—																														
	Adults—Male	2	1	4	3	10	3	..	1	..	4	1	..	..	3	4	6	..	2	1	9	4	1	..	4	9	13	2	6	4	25
	Female	2	..	4	4	10	1	..	..	2	3	1	2	..	2	5	..	..	..	1	1	2	3	..	3	8	10	3	1	11	25
	Children—Male	12	1	3	9	25	4	6	1	1	12	4	6	1	8	19	8	4	1	9	22	11	4	2	12	29	14	14	2	5	35
	Female	6	2	3	8	19	6	..	..	1	7	5	2	..	4	11	5	1	1	5	12	11	10	..	5	26	8	9	2	11	30
Transferred to Pulmonary		..	..	..	2	2	..	..	..	1	1	..	1	..	2	3	..	1	1	1	3	..	1	..	..	1	..	..	..	..	..
Lost sight of, or otherwise removed from Dispensary Register		10	2	..	10	22	12	4	2	18	36	5	2	3	18	28	6	3	1	16	26	7	2	1	5	15	..	1	..	1	2
DEAD—Adults—Male .....		..	..	..	..	12	2	..	1	1	4	1	1	2	..	4	..	2	..	..	2	1	..	1	1	3	..	..	1	..	1
Female .....		..	..	..	..	7	..	1	..	..	1	..	1	1	..	2	..	1	2	..	3	..	2	1	1	4	..	..	1	..	2
Children—Male .....		..	..	..	..	2	1	..	1	..	2	..	1	..	..	1	1	2	..	..	3	..	..	..	..	..	..	1	..	..	1
Female .....		..	..	..	..	2	..	2	..	..	2	..	..	1	..	1	1	1	..	..	2	..	..	..	..	..	..	2	1	1	4
TOTALS		42	8	17	42	215	34	16	8	34	92	23	18	8	48	97	29	18	8	38	93	36	24	5	31	96	45	32	14	34	125

Relations with other Departments, etc.—The majority of new cases entered on the Dispensary Register were referred either directly by the local doctors (65·4 per cent.) or else by the visiting nurses after notification (24·6 per cent.). In many cases it was considered that more appropriate treatment or advice could be given elsewhere, and 322 letters of recommendation were given to other departments, hospitals, or charitable agencies. 140 cases were referred to the Voluntary Tuberculosis Care Council, 21 to the Citizens' Service Society, 11 to the United Services Fund, 24 to the Principal School Medical Officer, 31 to the Public Assistance Committee, 29 to the Royal Victoria Infirmary, 36 to the Housing Committee, 11 to the Maternity and Child Welfare, and smaller numbers to various organisations.

Every effort is made to verify each notified case by bacteriological means, and during the year 1,251 specimens of sputum were examined at the Dispensary. Of this number 293 were found to contain tubercle bacilli, while 958 gave negative results. In addition 990 samples of sputum were sent, for examination, to the College of Medicine by the medical practitioners of the City. Of these 149 proved positive, and 841 negative.

Work of the Nurses.—1,046 new patients were seen, as against 1,085 in 1929, and 9,930 subsequent visits were made, giving a grand total of 10,976 for the year. The number of patients on the nurses' lists on December 31st, 1930, was 1,590, comprising 690 males, 485 females, and 415 children.

In 624 cases tubercle bacilli had been found in the sputum, and special attention has always been paid to these infective cases. They are visited at least once monthly, and their contacts are kept under the closest possible supervision.

A comprehensive survey of these cases was made at the end of the year, and some very interesting and valuable facts were obtained.

Below the age of 16 years, there were 27 cases (11 females and 16 males), while above that age there were 367 males and 230 females.

293 (152 males and 141 females), or 49 per cent. of the "adult" cases, were between the ages of 20 and 35 years. The figures for this age period show an increase in female patients to male patients when compared with those for the year 1920. For that year, although 50 per cent. of the total, there were 190 males and 80 females.

The physical condition of 94 cases was stated to be improved; 117 had retrogressed; 287 were stationary and 126 were in institutions. 255 were working or able to work, but unemployed.

The housing and home conditions were good in 263 instances, only moderate in 220, while 141 were frankly bad. Of the last number, only 43 were in institutions.

With regard to the conditions under which the patients sleep, it was found that 278 had a room and a bed to themselves, while 125 had a bed, but not a room to themselves, and 221 (who are infectious cases) slept with another person or persons. Of the last category, only 50 were in institutions, leaving 171 as a source of infection to their bedfellows.

In 74 instances, as a result of the efforts of the Dispensary staff, the sleeping arrangements had been changed for the better.

During the year, the names of 1,317 patients were removed from the nurses' lists ; this total includes 302 deaths (209 sputum positive and 93 negative). Visits to 1,015 patients were discontinued on the instruction of the Tuberculosis Medical Officer ; of these only 45 were sputum positive cases, 24 of whom had left the district, while 970 were negatives. In 922 of the negative cases the names were removed because there was no evidence of active tuberculosis, while 48 had left the district.

The Work of the Sanitary Inspector.—This officer disinfects houses after deaths, or changes of address, of persons suffering from pulmonary tuberculosis, arranges for the removal and disinfection of patients' clothing and bedding, and reports on any insanitary conditions existing in the homes of dispensary patients, such as overcrowding, insufficient ventilation, or defective sanitary arrangements.

The details of his work were as follows :—

Houses visited	799
Houses disinfected (total)	738
For patients going to Sanatoria	130
For patients changing their address	63
For patients going to Hospital.....	383
After death	162
Rooms disinfected in above houses	896
Total number of visits	1506

The types of houses disinfected were as follows :—one roomed, 72 ; two-roomed, 183 ; three-roomed, 187 ; four-roomed, 179 ; more than four rooms, 117.

Houses found to have sanitary defects (including overcrowding) and re- ferred to the Senior Sanitary In- specter	65
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INSTITUTIONAL TREATMENT.

55 beds were provided at Barrasford Sanatorium for early or moderately advanced cases of pulmonary tuberculosis, but in August 73 beds were occupied by Newcastle patients; 136 beds were available for more advanced or emergency cases at the Sanatorium Pavilions at the City Hospital, Walker Gate, while at Stannington Sanatorium (a private institution) 30 beds were maintained for the treatment of tuberculous children.

On the 1st April, Wingrove Hospital was transferred from the Board of Guardians to the Corporation, under the Local Government Act, 1929, and re-named the Newcastle upon Tyne General Hospital. 31 patients suffering from pulmonary tuberculosis were transferred to the Sanatorium Pavilions, Walker Gate, on that date. 32 patients suffering from non-pulmonary tuberculosis, who were inmates of Wingrove Hospital, were retained for further treatment.

Barrasford Sanatorium.—The following particulars refer only to Newcastle patients. The report of the Medical Superintendent of Barrasford Sanatorium will be found under a separate heading, and contains the complete statistics for that Institution.

121 patients (75 men and 46 women) were admitted in the course of the year, and were classified at the Dispensary in the following categories, in accordance with the classification in Memo. 37/T.: G.1 +, 7; G.2 +, 61; G.3 +, 14; T.B. Minus, 29. (In the latter category 8 were pleurisy with effusion), and 10 were sent for the purpose of observation.

Details of the admissions and discharges are given in the following table. The total number of days, and average length of stay is given in the table on page 174:—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM
DURING THE YEAR 1930.

(Table II. B., Memo. 37/T.)

	Sex.	In Barrasford Sanat'm on 1st January, 1930.	Admitted during the Year.	Dis- charged during the Year.	In Barrasford Sanat'm on 31st December, 1930.
Patients	M.	39	68	79	28
Do.	F.	21	43	40	24
Observation Cases	M.	..	7	6	1
Do.	F.	..	3	2	1
TOTALS.....		60	121	127	54

Of the 8 patients discharged who had been under observation, 5 were found to be suffering from tuberculosis.

The results of treatment in the institution were satisfactory, and the condition of the patients on discharge was as follows :—

RESULTS.	Males.	Females.	TOTAL.
Quiescent.....	9	4	13
Improved	64	30	94
Without Improvement	12	8	20
TOTALS	85	42	127

Discharged patients are visited at frequent intervals by the Dispensary staff and are encouraged to report periodically so that they can be examined and records kept.

In the next table a summary is given of the condition on December 31st, 1930, of all the patients treated at the Corporation expense during the last five years :—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM
AND THE RESULTS.

YEAR.	Number of Patients discharged from Barrasford Sanatorium.	MALES.	FEMALES.	Condition at end of Year 1930.					Total Number of days in the Sanatorium.	Average number of days in the Sanatorium.
				Well, working or fit to work.	Improved or moderately well.	Relapsed.	Dead.	Lost sight of, or left the district.		
1926	143	104	39	47	8	5	69	14	19,518	136
1927	114	79	35	30	13	9	46	16	15,147	133
1928	110	85	25	54	11	5	23	17	14,088	128
1929	115	75	40	61	12	10	24	8	19,659	171
1930	127	85	42	90	24	7	6	..	26,649	210
TOTALS ..	609	428	181	282	68	36	168	55	95,061	156
Received treatment in previous years ..	85	65	20	26	16	7	34	2	..	..
Nett Cases	524	363	161	256	52	29	134	53	95,061	181

Sputum Positive Patients.—The appearance of tubercle bacilli in the sputum indicates that there is active destruction of lung tissue, but it must be recognised that there is always a doubt about any case in which the diagnosis has not been verified bacteriologically. Accordingly the bacterial history of each patient admitted to Barrasford Sanatorium has been investigated as thoroughly as possible, and the results are tabulated as follows :—

BACTERIAL HISTORY OF
PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM.

YEAR.	Persons discharged from Barrasford Sanatorium.			Number who had Tubercle Bacilli found in the Sputum after discharge.	Persons deceased at the end of the year.				Cases who had Tubercle Bacilli in the Sputum and could not be traced at end of Year.
	TOTAL Nett Cases.	Number who had Tubercle Bacilli found in the Sputum.	Number who had <i>not</i> Tubercle Bacilli found in the Sputum.		TOTAL.	Tubercle Bacilli found in the Sputum before or during treatment.	Tubercle Bacilli found in the Sputum after discharge.	No record of Tubercle Bacilli ever found in Sputum.	
1926	124	104	20	2	59	50	1	8	11
1927	98	71	27	2	36	34	..	2	11
1928	94	59	35	..	17	13	..	4	9
1929	98	75	23	..	17	17	..	..	5
1930	110	81	29	1	5	4	..	1	..
TOTALS	524	390	134	5	134	118	1	15	36

The very heavy mortality experienced by the bacteriologically verified cases shows how serious is the finding of tubercle bacilli in the sputa of patients of the industrial classes.

STANNINGTON SANATORIUM.

The 30 beds were kept fully occupied throughout the year, and 38 patients completed treatment.

The details appear below :—

CHILDREN WHO RECEIVED TREATMENT IN STANNINGTON SANATORIUM
DURING YEAR 1930.

	In Sanatorium on 1st Jan., 1930.	Admitted during the Year.	Persons who completed Treatment during the year.			In Sanatorium on 31st Dec. 1930.
			Number	Total Number of Days	Average length of stay in Days.	
Males	14	19	20	4,347	217	13
Females	16	19	18	5,201	289	17
TOTALS....	30	38	38	9,548	251	30

In nearly every case great benefit accrued to the patient, as is shown in the following return :—

	Males.	Females.	Total.
Disease quiescent	12	7	19
Improved	8	11	19
Without Improvement .....	..	..	..
TOTALS	20	18	38

SANATORIUM PAVILIONS, WALKER GATE.

On April 1st, Pavilion K. was re-opened, containing 30 beds, to make provision for patients suffering from pulmonary tuberculosis who were transferred from Wingrove Hospital when that Institution was taken over by the Newcastle Corporation, bringing the number of beds at the Sanatorium Pavilions to 136. These have been generally kept fully occupied, and at times there were patients awaiting admission.

442 patients were admitted (270 males and 172 females), and included 31 patients transferred from Wingrove Hospital on April 1st ; also 43 admitted to Newcastle General Hospital who were found to be suffering from pulmonary tuberculosis and transferred.

Details of the number of patients admitted and discharged are given in the accompanying table :—

PATIENTS WHO RECEIVED TREATMENT IN THE SANATORIUM PAVILIONS,
WALKER GATE, DURING THE YEAR 1930.

(Table II. B., Memo. 37/T.)

		Sex.	In Institu- tion on 1st January, 1930.	Ad- mitted during the Year.	Dis- charged during the Year.	Died in Institu- tion during the Year.	In Institu- tion on 31st Dec., 1930.
Number of Patients.	Adults ..	M.	45	218	118	65	80
	Do.	F.	37	132	103	34	32
	Children .	M.	2	14	10	2	4
	Do.	F.	1	12	8	1	4
Observation Cases.	Adults ..	M.	3	20	16	2	5
	Do.	F.	4	18	19	..	3
	Children .	M.	1	18	17	..	2
	Do.	F.	1	10	6	1	4
TOTALS...	..	..	94	442	297	105	134

N.B.—21 patients were re-admitted and are counted as 42 admissions.

1 patient was re-admitted twice, and is counted as 3 admissions.

Of the 61 patients discharged who had been under observation, 16 were found to be suffering from tuberculosis. The total number of days of those who received treatment was 39,270, giving an average length of stay of 97 days.

105 patients died in the institution; the condition of the other patients on discharge is given in the table below :—

	Males.	Females.	Total.
Improved	113	95	208
Without Improvement	48	41	89
Died in Hospital	69	36	105
TOTALS.....	230	172	402

Many of those discharged “improved” were fit for light work, while 10 were transferred to Barrasford Sanatorium, and 4 to Stanington Sanatorium.

Treatment has been on Sanatorium lines, modified to some extent in view of the type of patient; the essentials are the same, however, namely, rest and good food under satisfactory hygienic conditions, with exercise graduated to the patient's tolerance.

Artificial Pneumothorax.—There were 17 initial inductions of artificial pneumothorax and 722 refills performed at Walker Gate Sanatorium during the year. Since the year 1922, 189 patients have received this form of treatment at Walker Gate Sanatorium, and 156 at Barrasford Sanatorium.

NEWCASTLE GENERAL HOSPITAL.

As previously mentioned, patients suffering from pulmonary tuberculosis were, on the 1st April, transferred to the Sanatorium Pavilions, Walker Gate, but non-pulmonary patients were retained. On that date there were 32 patients of this category in the Institution. From the 1st April, 62 patients were admitted (33 males, and 29 females). Details are given in the following table:—

PATIENTS SUFFERING FROM NON-PULMONARY TUBERCULOSIS WHO RECEIVED TREATMENT IN NEWCASTLE GENERAL HOSPITAL, FROM 1ST APRIL, 1930, TO 31ST DECEMBER, 1930.

	Sex.	In Institu- tion on 1st April, 1930.	Ad- mitted.	Dis- charged.	Died in Institu- tion.	In Institu- tion on 31st Dec., 1930.
Adults	M.	7	18	14	2	9
Do.	F.	11	16	15	5	7
Children	M.	7	15	7	2	13
Do.	F.	7	13	6	4	10
TOTALS		32	62	42	13	39

The results of the treatment received are given in the table below :—

	Males.	Females.	Children.	Totals.
Improved	13	10	13	36
Without Improvement	1	5	..	6
Died in Hospital	2	5	6	13
	16	20	19	55

The total number of days of those who received treatment was 3,394, giving an average length of stay of 61 days.

X-Ray Examinations.—During the year the following thoracic examinations were carried out, viz., 476 films and 379 screen examinations. In addition, many patients are screened as a routine, especially during artificial pneumo-thorax treatment, of which no special record has been kept.

Deaths in Institutions.—196 of the deaths from tuberculosis (147 “lungs” and 49 “other forms”) occurred in institutions. 111 patients (101 “lungs” and 10 “other forms”) died in the Sanatorium Pavilions, Walker Gate, and the City Hospital for Infectious Diseases, 50 patients (26 “lungs” and 24 “other forms”) in Newcastle General Hospital, 13 patients (3 “lungs” and 10 “other forms”) in the Royal Victoria Infirmary, 4 patients (1 “lungs,” 3 “other forms”) in the Fleming Memorial Hospital, and 18 patients in other institutions.

The various activities of the Tuberculosis Section have been summarised, and are set out on page 180, together with the corresponding figures for previous year .

TUBERCULOSIS SECTION.

SUMMARY.

	Average for 5 years.			1928.	1929.	1930.
	1913-17	1918-22	1923-27.			
<i>Notifications . . . Total.</i>	1013	786	828	788	787	719
Pulmonary	661	538	543	508	551	507
Non-Pulmonary	352	248	285	280	236	212
Notified by Disp. Med. Staff	174	184	151	145	198	204
<i>Deaths (Corrected) Total.</i>	536	469	419	372	384	365
Pulmonary	382	354	325	295	309	298
Non-Pulmonary	154	115	94	77	75	67
<i>Attendances at Dispensary</i>	6777	10588	8283	7209	7053	7132
New Patients	899	919	954	934	997	1053
Discontinued cases returned . . . . .	..	..	..	..	178	176
<i>Barrasford Sanatorium</i>						
Admitted	74	105	112	127	120	121
Discharged	74	103	112	110	115	127
<i>Stannington Sanatorium.</i>						
Admitted	58	44	43	46	43	38
Discharged	52	44	43	46	43	38
<i>Sanatorium Pavilions, Walker Gate.</i>						
Admitted	92	187	281	267	303	442
Discharged	62	134	207	198	206	297
Died	23	48	67	72	85	105
<i>Newcastle General Hospital—</i>						
<i>Non-Pulmonary Cases only—</i>						
Admitted . . . . .	..	..	..	..	..	62
Discharged . . . . .	..	..	..	..	..	42
Died . . . . .	..	..	..	..	..	13
<i>Bacteriological Exams.</i>						
<i>College of Med.. Total.</i>	690	604	619	706	699	990
Sputum—Positive ..	177	138	110	114	109	149
Negative .	513	466	509	592	590	841
<i>Dispensary . . . Total.</i>	678	1546	1357	1191	1250	1251
Sputum—Positive .	151	343	295	289	330	293
Negative .	527	1203	1062	902	920	958
<i>Urine Examinations .</i>	586	921	947	960	996	999
<i>Work of Nurses.</i>						
New Patients	800	632	1035	1060	1085	1046
Subsequent Visits . . .	5362	11295	11188	9978	10029	9930
Total Visits ..	6162	11927	12223	11038	11114	10976
<i>Special Inspector's Visits</i>	1560	1016	1331	1325	1325	1506
Houses Disinfected ..	533	513	706	629	673	738
Rooms Disinfected ..	853	578	806	698	781	896
Sanitary Defects—						
Houses	38	68	148	117	66	65

GEORGE HURRELL, M.D., D.P.H.,

Tuberculosis Medical Officer.

Annual Return to the Ministry of Health, under Memo. 37/T.

TABLE I.

[illegible]

BARRASFORD SANATORIUM.

Report of the Medical Superintendent

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to submit a report on the work at Barrasford Sanatorium during the year 1930.

Accommodation.—The accommodation at the institution provides for 90 patients, being divided into 63 beds for males and 27 for females. The nursing and clerical staff numbers 11, and the domestic staff 18. The housing of this female staff leaves much to be desired, and it is greatly to be hoped that the Council will, at an early date, agree to the recommendation of the Health Committee that a Nurses' Home should be built. To obtain the best services of the staff, it is essential that they should be reasonably well accommodated. At present the rooms they occupy are scattered through the building, in many instances there is overcrowding, and for all it is impossible to obtain rest, change and freedom when off duty, owing to the rooms being in the midst of a busy sanatorium.

Water.—The difficulty of the water supply seems to have been overcome during the year. Originally a specially sunk bore hole supplied sufficient water for all purposes. Prior to 1917 this began to fail, and in 1921 the Corporation laid a pipe from the Newcastle and Gateshead Company's main into the sanatorium well, so that when required, the bore hole supply could be augmented from the Company's main. More recently, however, the supply from the bore hole fell off so much that during the

time each winter the Company laid off its pipe for cleaning purposes, the greatest difficulty was experienced in running the institution, owing to the shortage. Last year a new bore hole was sunk to the depth of 220 feet. It is steel tubed for the first 120 feet, and so sealed and perforated that no water enters from above a depth of 90 feet. Below this level water was found which was less hard than that obtained above 90 feet. The result provides 6,000 gallons of water per hour, which is far more than the present maximum requirements, and if sustained, removes all anxiety on the score of supply, both for the present and for any future developments.

Dental Clinic.—During the year the dental surgery was fully equipped, though it was not completed until December. Only one clinic was held in 1930, but since then regular treatment days have been held. It is quite clear that one clinic a fortnight will be insufficient, and the Committee will be asked to sanction the weekly attendance of the dental surgeon. Mr. G. Hutchinson, L.D.S., of Newcastle, was appointed as dental surgeon, and in his hands the work is excellently and expeditiously carried out.

Surgical Methods of Treatment.—The treatment of pulmonary tuberculosis by surgical methods has now advanced to such a degree, and is so valuable and important, that a sanatorium which does not provide such treatment cannot be thoroughly efficient, and certainly is not able to deal adequately with a proportion of the patients who, with surgical aid, may make a good recovery, but without will not.

As has been taught at Barrasford for many years, the chief factor in the treatment of pulmonary tuberculosis is rest, both to the body as a whole, and also locally to the lung. In suitable cases the lung itself is best and

most easily rested by collapsing it by means of an artificial pneumothorax, and this form of treatment is already in wide use here. There is, however, a number of cases where the lung cannot be collapsed by this means, because it is adherent to the chest wall, and is not free. In the absence of surgical methods, usually little more than patching up of the health and recurrence of symptoms sooner or later is to be expected.

Surgery, however, offers two important methods of treatment to the patient with suitably disposed lung disease, where collapse treatment by artificial pneumothorax is impossible. One is the severance of the phrenic nerve, which limits the movement of the diaphragm and gives rest thereby, whilst also diminishing the volume of the lung—this is known as phrenic evulsion. The other is the severance of the ribs so that the bony cage-work of the chest is allowed to fall in and compress the diseased lung—this is called thoracoplasty.

Both these treatments are widely used, and should be available at Barrasford; they are not experimental procedures, but are proved surgical principles. They require, however, a surgical theatre and the services of a surgeon. Newly built sanatoriums now include operating theatres in their plans, and older institutions are adding them. The provision of an operating theatre at Barrasford, together with the services of a surgeon, is essential, and it is trusted that the Committee's attention may be directed to this great need. These are not the cases that should occupy the beds of general hospitals. The decision as to the suitability of cases for surgical treatment is primarily one for an experienced tuberculosis physician, and the necessary operation should be done at the sanatorium by the surgeon, whilst the case is still under the care of the physician, and subject to modified sanatorium treatment.

Handicrafts.—During the year the handicrafts department has been developed and increased. A new shop has been built and equipped for those employed on woodwork, and this additional accommodation leaves the handicraft shop free for those engaged on handicrafts, and the overlapping and mild confusion which was apt to occur when the latter was used both for handicrafts and woodwork, are removed. The new shop is most satisfactory; it is heated by steam in winter, and the men can work in comfort and under excellent conditions. As it is close to the joiner's shop, supervision can be given much more satisfactorily than when this work was done in handicrafts, some considerable distance away.

The main work of the wood-work section is the making of oak stools which, when completed in handicrafts, by having seagrass seats worked, command a ready sale. Corner wardrobes for patients' rooms are also made, and any wood-working within the competence of patients is carried out under the supervision of the joiner (MR. F. C. GERDES).

The handicrafts department is in charge of a whole time instructor (MR. J. A. CAUGHEY). Women patients attend in the mornings and men in the afternoons. The classes average 15 to 20. The attendances numbered 7,666, divided into men patients, 5,317, and women patients, 2,279, whilst the total number of hours worked was 15,332. Instruction is given in a variety of crafts, including leather work, raffia, seagrass weaving, rug making, basket making, and to a less extent, poker work, lampshade painting, and several other arts suitable for individual patients.

The scheme is an undoubted success—it gives mental and manual occupation to the patients whilst they are subject to the otherwise inevitably monotonous

principles of sanatorium routine. The more robust patients are glad of a change when they have worked up to the full walks on the roads in the four available directions, whilst the frailer patients, who cannot manage the long walks, regard occupation in the handicrafts shop as a godsend. The standard of work is extraordinarily good, and the wastage of material is comparatively small. The finished goods are usually disposed of without difficulty. The takings for goods sold during 1930 amounted to £138 10s. 0d., whilst the cost of materials is estimated at £165. The sales during 1930 of completed work have therefore practically balanced the sum expended on materials.

X-Ray Plant.—The X-ray plant (installed in 1923) continues to give good service, though its design is now somewhat out of date.

An X-ray film is taken of every case on admission as a routine. This acts as a check on the ordinary physical examination of the case, and is a safeguard against missing disease in the lungs which may be exhibiting only indefinite, or no, signs of its presence. Subsequent films are taken when necessary. A comparison of the X-ray appearances taken after an adequate period of sanatorium treatment—say 12 or 18 months—with those on admission, is probably the best method of investigating the effects of treatment on the disease, if coupled with regular sputum examinations.

In connection with the treatment by artificial pneumothorax, the chest is examined by radioscopy (“screened”) as a routine, so that the degree of collapse of lung obtained can be observed, and the presence of any complications recognised.

During the year 251 X-ray films were completed, and the interpretation recorded in the patients' notes. The screenings in connection with the artificial pneumothorax work ran into several hundreds.

Library.—As in previous years, regular gifts of books have been received from the British Red Cross Society, Dr. Harold Kerr, and numerous other donors. Sincere thanks are due to all of these. Books, especially those of fiction, and magazines are of the greatest use to patients, many of whom spend longer or shorter periods in bed on admission whilst raised temperatures are being controlled. The Health Committee have now agreed to pay an annual subscription to the British Red Cross Society in return for the gifts of books.

Admissions.—The type of case admitted was much the same as in recent years, the bulk of them being Group 2 cases : that is, intermediate in stage, being neither minimal nor far advanced. Cases with limited disease of the lung on admission remain very rare.

The total number of cases admitted to the Sanatorium during 1930 was 186, 8 more than in the previous year. The number of Newcastle admissions is practically identical—121, as against 120 in 1929, whilst the Gateshead and West Hartlepool admissions were slightly increased. Of the 186 admitted cases, 24 had been in the Sanatorium previously, and were disposed as follows :—

Newcastle Corporation	.....	16 out of 121
Gateshead Corporation	.....	5 out of 29
Tynemouth Corporation	....	1 out of 7
West Hartlepool Corpora- tion		2 out of 25

Two of the re-admitted cases had been in twice previously ; one in 1915 and 1926, and one in 1925 and 1927.

1 of the re-admitted cases was first admitted in 1917
 1 ,, ,, ,, 1921
 2 of the re-admitted cases were first admitted in 1922
 1 of the re-admitted cases was first admitted in 1923
 1 ,, ,, ,, 1924
 2 of the re-admitted cases were first admitted in 1925
 4 ,, ,, ,, 1926
 2 ,, ,, ,, 1927
 5 ,, ,, ,, 1928
 3 ,, ,, ,, 1929

Although all these re-admitted cases have had at some time tubercle bacilli in the sputum, in 5 of them bacilli were not demonstrated in the sputum during residence in 1930.

ADMISSIONS TO THE SANATORIUM DURING 1930.

Authority.	Male.	Female.	Total.
Newcastle Corporation	75	46	121
Gateshead Corporation	29	..	29
Tynemouth Corporation .....	..	7	7
West Hartlepool Corporation	15	10	25
Tynemouth Union .....	..	2	2
Private Cases	2	..	2
	121	65	186
During 1929	124	54	178
During 1928	147	55	202
During 1927	151	65	216
During 1926	166	62	228
During 1925	182	59	241
During 1924	150	51	201
During 1923	155	52	207
During 1922	212	55	267
During 1921	220	60	280

Discharges.—There were 190 discharges during 1930, as compared with 169 in 1929. The great majority of the discharges were arranged with the approval of the Medical superintendent. Unfortunately, it is uncommon for married men with responsibilities to be able to remain in the sanatorium for very long periods, owing to the obvious need for their returning to work in order to maintain their wives and children. The younger and unmarried patients of both sexes, however, have stayed extremely well, and the fact that the average duration of stay for all patients discharged during the year (including the tuberculous, the non-tuberculous, who were discharged as soon as the diagnosis was corrected, those too ill to be kept, and those who “could not settle”) exceeded 26 weeks, is encouraging. There was one summary dismissal during the year, making a total of only 6 in the 10 years since 1921, when the Corporation acquired the sanatorium. No case died in the sanatorium during the year.

DISCHARGES FROM THE SANATORIUM DURING 1930.

Authority.	Male.	Female.	Total.
Newcastle Corporation	85	42	127
Gateshead Corporation	30	..	30
Tynemouth Corporation	1	6	7
West Hartlepool Corporation	10	7	17
Tynemouth Union .....	..	2	2
Private Cases	3	2	5
Post Office Sanatorium Society	2	..	2
	131	59	190
During 1929	115	54	169
During 1928	142	45	187
During 1927	151	71	222
During 1926	172	61	233
During 1925	171	57	228
During 1924	152	46	198
During 1923	167	52	219
During 1922	229	65	294
During 1921	212	62	274

SUMMARY OF MOVEMENTS OF PATIENTS DURING 1930.

Authority.	In residence night of Dec. 31st, 1929.	Admitted during 1930.	Discharged during 1930.	In residence night of Dec. 31st, 1930.
Newcastle Corporation	60	121	127	54
Gateshead Corporation	10	29	30	9
Tynemouth Corporation	2	7	7	2
West Hartlepool Corporation.....	6	25	17	14
Tynemouth Union .....	..	2	2	..
Private Cases	3	2	5	..
Post Office Sanatorium Society....	2	..	2	..
	83	186	190	79

Details in Connection with Discharged Cases.—The particulars of patients, and the results of their treatment, which are set out later, are based on the discharged or completed cases.

Of the 190 such, 10 exhibited no definite signs or symptoms of clinical tuberculosis, and were discharged as soon as this fact was established, and are excluded from the particulars and results of treatment which follow. These details are based on the 180 cases of definite tuberculosis.

(a) Length of Stay—

The average duration of treatment of all cases was 184·4 days.

Excluding the 10 non-tuberculous cases, 192·7 days.

The 120 Newcastle cases alone averaged 211·7 days.

The longest stay was 1,096 days; the shortest 2 days.

(b) Beds Occupied and Patient Days—

Average number of beds occupied, 83·7; 52·8 by males, and 30·9 by females.

Total number of patient days was 30,590; 19,288 male, and 11,302 female.

Below is given an analysis of the average number of beds occupied and the number of patient days :—

Authority.	Average Beds occupied daily.	Patient Days.
Newcastle Corporation	61·2	22,365
Gateshead Corporation.....	9·86	3,600
Tynemouth Corporation	1·95	714
West Hartlepool Corporation	8·08	2,950
Tynemouth Union	·46	168
Private Cases	1·808	658
Post Office Sanatorium Society	·37	135

(c) *Social Status*—

	Male.	Female.	Total.
Single	64	34	98
Married	59	21	80
Widowers	1	..	1
Widows .....	..	1	1
TOTAL	124	56	180

(d) *Age*—

Years.	Male.	Female.	Total.
16—20.....	23	5	28
20—25.....	21	25	46
25—30.....	31	18	49
30—35.....	11	4	15
35—40.....	14	1	15
40—45.....	11	1	12
45—50.....	4	1	5
50—55.....	6	1	7
55—60.....	2	..	2
60—65.....	1	..	1
TOTAL	124	56	180

(e) *Occupations of 124 Male Patients*—

Engineering and Metal Workers.....	22
Labourers	13
Clerks	11
Miners	8
Shop Assistants	6
Motor Mechanics and Drivers	4
Salesmen	4

Ex-Naval Men	3
Joiners	3
School Teachers	2
Machinists	2
Chemical Workers.....	2
Painters	2
Draughtsmen	2
Commercial Travellers	2
Postmen	2
Butchers	2
Shipwrights	2
Electricians	2
Railway Workers—Outside.....	2
Railway Workers—Inside	1
Hotel Porters.....	2

and one each of the following : office boy, film operator, stoker, hairdresser, baths manager, caulker, relieving officer, tool maker, telegraphist, caretaker, analytical chemist, plasterer, 'bus conductor, motorman (tramways), cartman, wireman, printer's assistant, plumber, tailor's cutter, dental surgeon, dispenser, decorator, marker, furnaceman, and one said he had no occupation.—Total—124.

(f) *Occupations of 56 Female Patients—*

Housewives	20
Domestic Work at Home	6
Clerks and Typists	7
Domestic Servants	5
Shop Assistants	5
Saleswomen	2
Machinists	2
Students	2

and one each of the following : laundry packer, stillroom maid, caretaker, fuse examiner, tailoress, furrier and school teacher.—Total—56.

Diagnosis.—The diagnosis of pulmonary tuberculosis was confirmed bacteriologically, either before admission or during residence, in 152 cases; 104 males and 48 females. 27 patients (19 males and 8 females) were apparently without tubercle bacilli in the sputum, and a male said he had no expectoration; making 28 cases of tuberculosis in whose sputa tubercle bacilli had never been demonstrated. The clinical examination findings in all sputum negative cases can be divided as follows :—

Not suffering from clinical tuberculosis.....	10
Definite pleural tuberculosis without evidence of lung tuberculosis	14
Definite physical signs and X-Ray evidence of lung tuberculosis without demonstrable bacilli	14

In the cases of the 14 patients in the last group, the radiographs all showed appearances suggesting the presence of deposit in the pulmonary situation for which tuberculosis shows a predilection. 225 sputum examinations were made in connection with these 14 cases, or an average of 17 each.

1,382 sputum examinations were made at the sanatorium during the year; of these 345 were positive as regards the presence of tubercle bacilli, and 1,037 were negative.

931 complete examinations of the chest were made during the year, together with routine examinations of the larynx and urine on admission of the patient, and subsequently when necessary.

During the year, 10 cases were discharged as not suffering from pulmonary tuberculosis, and the diagnoses in these cases were as follows :—

Malignant disease of the lung	3
Pulmonary fibrosis without evidence of tuberculosis	2
Chronic bronchitis	1
Bronchiectasis	1
Scoliosis	1
Sub-diaphragmatic abscess	1
No pathological condition detected	1

These non-tuberculous cases were included in 13 patients sent for observation for the purpose of making a diagnosis. Three were found to be suffering from pulmonary tuberculosis.

The period of observation for the purpose of diagnosis is set out below :—

	Under 1 week.		1 to 2 weeks.		2 to 4 weeks.		More than 4 weeks.	
	M.	F.	M.	F.	M.	F.	M.	F.
Tuberculous.....	2	1	..	..	..	..	..	..
Non-Tuberculous .	..	..	2	1	3	1	2	1
Doubtful .....	..	..	..	..	..	..	..	..

In connection with diagnosis, lipiodol was used in four cases, two of them having both bronchial tracts investigated, one the right and the other the left. The material was introduced through the crico-thyroid membrane in the manner usual in this country. In three of the cases no positive appearances were displayed, but in the fourth the characteristic shadows associated with bronchiectasis made the diagnosis definite.

Treatment.

No change has been made in the routine treatment. From the day of admission patients are taught that rest is the cardinal factor in their getting well. They are told that no diseased part of the body will heal readily

unless it is rested. They are therefore enjoined to avoid exertion of every description, and warned that exercise which produces shortness of breath of even slight degree is more likely to aggravate the disease in the lungs than to allow it to settle down. If the bodily temperature is found to be raised, rest in bed is imperative, and until it has been established that an incoming patient's temperature is normal, he is kept in bed. Similarly all patients take their rectal temperatures at fixed times daily, and any deviation from normal receives appropriate attention.

As most patients who seek medical advice on account of pulmonary tuberculosis have lost weight, the question of food is also very important. It is not thought that any particular diet is necessary, and there is little need for abundance of extra eggs, cod liver oil, emulsions, etc., that patients who have the means would take if they were not advised to the contrary at the sanatorium. One may question if the large amount of milk that forms part of the dietary of every sanatorium is really necessary. At Barrasford butter is used, and the food is plain, wholesome, and as varied as can be at any institution which is so isolated. Given rest, the type of patient coming to Barrasford soon develops an appetite, and the previous loss of weight is regained.

When the patient's temperature ranges normally, he commences exercise, and does prescribed walks on the roads in the four directions available. When these are done satisfactorily he is drafted to handicrafts, wood-work, gardening or to any suitable occupation that will serve to pass the time profitably whilst he is following sanatorium principles.

So far as Barrasford is concerned, the chief points of routine treatment are rest, diet and occupation.

Special forms of treatment are available for patients who fail to respond to the routine principles, and such patients nearly always exhibit a raised bodily temperature. 74 of the 180 definite cases of tuberculosis were found to have normal temperatures during the whole of their residence, 106 patients were feverish at some time or other of their treatment in the sanatorium, spending amongst them 5,229 days in bed.

Afebrile throughout Treatment.	Febrile on Admission, Afebrile on Discharge.	Febrile Intermittently	Febrile throughout Treatment.	Afebrile on Admission, Febrile on Discharge.
74	55	31	17	3

Artificial Pneumothorax Treatment.

This is by far the most important and most widely applied method of special treatment. It carries further the principle of rest, and consists of immobilising the lung by introducing air between it and the chest wall, so that it is gently compressed. It is maintained by periodical refills of air. There seems to be a tendency amongst tuberculosis workers to reserve pneumothorax treatment until long periods of sanatorium treatment have been tried, or until a patient has broken down again in health after returning to work following sanatorium treatment. Realising, however, that a large proportion of cases treated by routine sanatorium methods relapse within one to five years, it is now the practice at Barrasford to induce a pneumothorax at once in suitable cases. If a patient is going to stay six, nine, or twelve months in the sanatorium, surely he is more likely to obtain real healing if the worse affected lung is kept immobilised by an effective pneumothorax. It is known that cases with most extensive disease respond to this treatment, and it is for this class of case that most workers reserve it ;

but how much more stable will healing be if cases with less extensive disease have physical rest applied to the lung by an artificial pneumothorax whilst they are undertaking an adequate period of institutional treatment.

The most common immediate results of an effective artificial pneumothorax are the diminution or abolition of cough and sputum. This in itself is a relief which is not obtained by more than a very few of those who depend on routine treatment alone. A procedure that abolishes or diminishes sputum is valuable in making the patient more comfortable, but is also an important achievement, as it seems clear that much spread of disease into the lung involved secondly is due to material containing tubercle bacilli from the diseased lung being propelled across the windpipe into the other lung during coughing. It is felt very strongly that for the working classes immediate artificial pneumothorax, coupled with routine sanatorium principles, is the treatment of choice when the disposition of the disease is mainly unilateral, whether it be extensive or more limited. To wait until the other treatment fails is to waste valuable time, and, moreover, probably miss the time when the procedure is possible. The longer the wait, the more likely is the lung to be adherent to the chest wall.

66 of the tuberculous cases discharged during 1930 were found to be suitable for treatment by this means, but in 12 of them the lung could not be collapsed owing to changes in the chest in the course of the disease. Of the 54 discharged cases in whom lung collapse was employed, 21 were right sided cases and 33 were left. In addition to these, four cases had had an artificial pneumothorax induced before admission, bringing the number

treated during the year to 58, 24 right and 34 left. In one additional case, fluid was withdrawn from the right side of the chest and replaced by air, for the purpose of making a diagnosis. A growth of the lung was revealed. In 11 of the cases the induced pneumothorax was ineffective, and was abandoned after a fair trial. In the remaining 47 cases it was effective, and either raised temperature or cough and sputum were controlled. 20 of the cases developed fluid in the pleural space on the side of the pneumothorax. The amount of fluid varied from a small quantity, only detectable on routine screening, to a large quantity, giving rise to definite physical signs. It is not our practice to withdraw fluid unless it is the cause of embarrassment. Most of the small and moderate sized effusions become absorbed spontaneously, and do not in any case interfere with the beneficent collapse of the lung, nor, it is thought, shorten the period of collapse. With regard to the large effusions, it is felt that the permanent fibrosis and limitation of movement of the diseased lung that results may not be the worst way of controlling the disease.

In connection with the above cases, all of whom were discharged during the year, 765 insufflations of air were performed, whilst during the year the total number of such operations was 1,002.

Sanocrysin.—This drug, a combination of gold and sodium thiosulphates, was used in 11 cases, being given by injection into a vein. The main complication that one is warned to be on guard against is albumin in the urine, due to damage of the kidneys by the drug, but routine urine examinations of the cases showed no trace of this. In the experience gained at Barrasford in the years sanocrysin has been used, by far the most common

complication, and the most dangerous, is diarrhœa. This occurred in two of the 11 cases, and led to the abandonment of the treatment. In three other cases the drug failed. The remaining six cases all completed a course of either just above or below five grams, and made a good immediate recovery, where routine treatment in all cases, and artificial pneumothorax as well in three, had failed to control a raised temperature. In a limited number of cases the use of sanocrysin is a method of treatment of the greatest value, the only drawback being the considerable cost of the drug.

Ultra-Violet Radiation, by means of lamps, is not regarded as having any place in the sanatorium treatment of pulmonary tuberculosis. The mercury vapour lamps were employed in four cases where there were complications. Two cases had minimal pulmonary tuberculosis with symptoms suggesting the presence of abdominal tuberculosis. As a result of combined treatment, there was very definite improvement in health. Similarly two cases with tuberculous glands of neck were treated—one with many discharging sores obtained healing, whilst in the other case there was little change. These cases received between them 194 exposures.

Results of Treatment.

The results of treatment seem to be best in the cases of pleurisy with effusion. Here the shower of tubercle bacilli from the central focus, instead of spraying the lung through the blood stream, are distributed in the pleura or covering of the lung, which becomes inflamed and produces fluid. Perhaps because of the rest given the parts by the local compression of the fluid, the process in the pleura usually subsides quickly with treatment. There remains the treatment of the central

focus, and if this be given time to become adequately encapsulated and sealed off, there is no reason why, with care, there should be any recurrence of disease. So far, during the last 10 years, no case of uncomplicated tuberculous pleurisy with effusion, which stayed in the sanatorium the required six months, has been returned for treatment. 14 such cases were treated during 1930, and all of them remained the full six months for the reasons explained to them on admission. In each case the immediate results were excellent, whilst the prospects of complete recovery are good.

In the cases of pulmonary disease, the immediate results were good in the majority of cases. The most popular criterion of improvement seems to be a gain of weight, but it is doubtful if this is anything more than a rough guide, and gives no indication as to the likelihood of the patient to maintain the improved condition.

The weight records of the 180 definite cases of tuberculosis of the lungs or pleura, and those of the 10 non-tuberculous cases are as follows :—

		Gained up to 7 lbs.	Gained 7 to 14 lbs.	Gained over 14 lbs.	Remained station- ary.	Lost up to 7 lbs.	Lost over 7 lbs.	Not weighed on discharge.	Total.
180 definite cases.	Gained weight..	51	60	37	..	..	..	..	148
	Lost weight....	..	..	..	..	19	4	..	23
	Stationary ....	..	..	..	7	..	..	..	7
	Not weighed on discharge....	..	..	..	..	..	..	2	2
	Total.....	51	60	37	7	19	4	2	180
12 non tuber- culous cases.	Gained weight..	4	..	1	..	..	..	..	5
	Lost weight ..	..	..	..	..	5	..	..	5
	Stationary ....	..	..	..	..	..	..	..	..
	Not weighed on discharge....	..	..	..	..	..	..	..	..
	Total.....	4	..	1	..	5	..	..	10

More valuable indications of improvement are the loss of sputum, or the absence of tubercle bacilli from any sputum which may be present. In this direction the successful artificial pneumothorax cases showed the best results, a large proportion of them being without sputum of any sort for a considerable time prior to discharge. As their treatment is to be continued in a larger number of them, there is every reason to be hopeful.

A still more reliable test of improvement is a comparison of the X-ray appearances on discharge with those on admission. A case who has made definite progress shows characteristic changes, though they do not usually appear within 18 months or two years of successful treatment—so slow is the process of healing in pulmonary tuberculosis.

Under the classification of cases introduced by the Ministry of Health, patients suffering from pulmonary tuberculosis are divided into :—

Class T.B. Minus, or those cases in which tubercle bacilli have never been demonstrated in the sputum, and,

Class T.B. Plus, viz., cases in which tubercle bacilli have at any time been found.

The latter class is further divided into 3 groups :—

Group 1.—Cases with slight constitutional disturbance, if any, and in which the obvious physical signs are of very limited extent.

Group 3.—Cases with profound systemic disturbance or constitutional deterioration, with marked impairment of function, and with little or no prospect of recovery.

Group 2.—All cases which cannot be placed in Groups 1 or 3.

To indicate results of treatment, the following terms are laid down :—

“ Quiescent.”—Cases which have no symptoms of tuberculosis and no signs of tuberculous disease, except such as are compatible with a completely healed lesion, and in which the sputum, if present, is free from tubercle bacilli.

“ Arrested.”—In pulmonary cases the term should be applied only to cases which have been “ quiescent ” for a period of at least 2 years.

“ Improved.”—Cases short of “ quiescent,” in which the general health is fair and the symptoms of tuberculosis have materially diminished.

“ No Material Improvement.”—All other patients who are alive.

When considered in these terms, the results of treatment of the 180 cases of lung or pleural tuberculosis can be set out as follows :—

T.B. Minus.		M.	F.	Total.
Quiescent		10	7	17
Improved.....		7	1	8
No material improvement ..		3	..	3

T.B. Plus.		M.	F.	Total.
G.1 { Quiescent .....	..	..	..	..
G.1 { Improved .....	..	1	1	1
G.1 { No material improvement ..	..	..	..	..
G.2 { Quiescent	2	..	2	2
G.2 { Improved	71	31	102	102
G.2 { No material improvement ..	13	9	22	22
G.3 { Quiescent .....	..	..	..	..
G.3 { Improved	4	1	5	5
G.3 { No material improvement ..	14	6	20	20

The comparatively large numbers of T.B. minus cases which improved to the degree of quiescence, is made up of the cases of pleural tuberculosis which had no evidence of disease in the lungs themselves, and on discharge had no symptoms, no sputum, and no signs of anything but pleural thickening. It will be seen that a large proportion of the cases sent for treatment had extensive disease on admission, and that the results of treatment are best in the sputum negative class, and the two higher groups of the sputum positive cases.

I am greatly indebted to the Matron (Miss F. Baguley, A.R.R.C.), for her continued co-operation, and thanks are due to the whole of the staff for their assistance.

Yours faithfully,

CECIL G. R. GOODWIN,
Medical Superintendent.

*Barrasford Sanatorium,
Northumberland,
19th May, 1931.*

REPORT OF THE
MEDICAL SUPERINTENDENT,
NEWCASTLE GENERAL HOSPITAL,

V.—GENERAL DISEASES
HOME AND HOSPITAL.

DOMICILIARY MEDICAL SERVICE.
NEWCASTLE GENERAL HOSPITAL.

DOMICILIARY MEDICAL SERVICE.

On the transfer of the Poor Law on 1st April, 1930, one of the matters delegated to the Health Committee by the City Council was the care of the sick poor. This work has been carried on by District Medical Officers, each of whom was in charge of a specified district of the City, and in addition to giving attendance, also supplied medicines.

It is proposed, however, to gradually introduce a panel system under which any poor person may have the choice of a doctor, while the Health Committee will be responsible for the provision and dispensing of medicines. A scheme on this basis covering a number of districts (comprising about half of the City) which happen to be vacant, has been drafted, but at the time of writing it awaits the final approval of the Health and Public Assistance Committees.

The following table gives particulars of the work of the District Medical Officers during the period 1st April—31st December, 1930 :—

District No.	District Medical Officer.	Number of Cases Treated.	Attendances by the M.O. at the Homes of the Patients.	Attendances by the Patients at the M.O.'s. Surgery.
1	Dr. R. L. Bell	419	882	1,285
2	Dr. J. MacRae	378	613	722
3	Dr. G. D. Newton	645	651	1,245
4	Dr. F. Hawthorn.....	905	837	1,852
5 & 6	Dr. E. H. Moseley*.....	1,339	1,406	2,236
7	Dr. W. Simpson	750	1,008	739
8	Dr. R. W. Nevin	673	1,359	1,125
9	Dr. W. T. Hall	614	1,162	1,024
Walker	Dr. T. J. Ryan	971	1,897	2,987

* Resigned 2nd December, 1930. Dr. G. P. Tulloh appointed temporarily as from 3rd December, 1930.

NEWCASTLE GENERAL HOSPITAL.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

It affords me much pleasure to present for your consideration this report of the year's work in the **Newcastle General Hospital**, the first that has been issued since the control was taken over by the City Council.

It was generally recognised that no sudden change could take place, but it is satisfactory to know that the Newcastle Authorities realised their responsibility, and had in readiness a scheme for the working of the Hospital, and this is gradually being brought into operation, and one hopes that before another twelve months have elapsed the Hospital will be fulfilling its destined function, viz., the treatment of the sick, both in body and in mind.

The actual "take over" on the "appointed day" was quite uneventful, causing no feeling whatever; this being due to the attitude adopted by yourself and your staff, and the work has gone on smoothly without any interruption.

It would be untrue to say that the months which have passed have been easy ones; rather the reverse, and at times one has been liable to become rather depressed and pessimistic, but surely it is reasonable to hope that with a fuller realisation of the necessities, more rapid progress will be made. It is quite realised that the serious economic position of the country makes any new outlay difficult.

The most urgent need is for more beds, as the present accommodation is taxed to the utmost limit, the proper classification of cases thus being made well nigh impossible. At least 200 beds are required, as three wards in the Old Hospital Block should be condemned. These wards could be with advantage utilised for other

necessary purposes. Accommodation for the proposed medical staff is also an urgent necessity, and I think it will be found necessary to make some temporary arrangement. The present accommodation for the steward and clerical staff is also hopelessly inadequate, and will have to be dealt with in the very near future.

These difficulties can, in my opinion, be met in two ways : either by launching on a building scheme, or by taking over the buildings at present under the control of the Public Assistance Committee. The latter is to be preferred from every point of view. All the immediate needs of the hospital would be met, and all the buildings and land coming under the control of the Health Committee, and being designated as Newcastle General Hospital, a new atmosphere would be created, with results which could only be beneficial. This arrangement, I would suggest, is not so one-sided as it might appear. The present workhouse system must be described as a demoralising one, and a new one appears to me to be inevitable.

The able-bodied men and women should be employed on productive work on the land, the produce being utilised in the various institutions in the City. A part of the Hospital could be set apart for the aged and infirm patients requiring a certain degree of medical care and nursing, and designated the Infirmary. This should be staffed by sisters, with attendants—male and female—under them. The other classes should come under the care of the appropriate committees.

I feel quite convinced that it would be a very short-sighted policy to put up new buildings to accommodate hospital patients, as that would undoubtedly have the

effect of perpetuating the old undesirable arrangement of having the hospital and workhouse in the same grounds. It is very unreasonable and unfair that anything in the nature of stigma should attach to the sick.

So far, the bulk of the patients admitted have been those for which the Public Assistance Committee is responsible ; but there is another class urgently requiring treatment, and it is for accommodation for this class that I plead.

To justify and employ the medical staff in the scheme which has been adopted, it is absolutely essential that a very much larger number of patients should be admitted and discharged—patients suffering from acute diseases, both medical and surgical, and only requiring treatment for relatively short periods.

In concluding this part of my report, I would like to say that I feel quite confident that should the additional beds for which I ask be provided, the Newcastle General Hospital would in a comparatively short time amply justify its existence, and take its part in the treatment of the sick of the City.

Mental.

The care and treatment of mental cases is under the control of the Public Assistance Committee in Elswick Grange, but as this forms a very important part of the work, occupying a large part of my time, I have always included a record in my Annual Report, and will do so on this occasion.

As I have expressed elsewhere, these cases should be treated on a par with the sick in body, under the Health Committee. The question of a Visiting Committee does not appear to be an unsurmountable one.

The new Mental Act, which came into force on January 1st, 1931, gives power to transfer the mental wards to the Health Committee. This Act deals with the treatment of voluntary and temporary patients, but there is no suitable accommodation available, either in the hospital or Elswick Grange. In my opinion, the provision of more beds for the treatment of the physically sick being the more urgent, should be the first consideration.

During the year 1930 the number of patients admitted to the mental wards was 350, a decrease of 14 on the previous year. Of these 181 were men and 169 women. I found it necessary to certify 63 men and 81 women, giving respective percentages of 35·1 and 47·8; the recovery rate, as is usually found, being higher in men.

The fact that it was possible to discharge 34·5 per cent. of the cases as cured or improved, to my mind, is ample justification for the observation wards being retained. It was found that in a number of the patients the physical condition required attention, so that 14·5 per cent. were transferred to hospital.

Electrical and X-Ray Department.

During the year under review this department was put under the charge of Dr. Whately Davidson, this being the first appointment under the new scheme adopted by the City Council. Extensive use has been made of the facilities provided, and there has been a decided increase in the amount of work done.

It has been recognised for some considerable time that the rooms in which the electrical apparatus is accommodated are very much too small, and when the old kitchen was vacated it was thought that it might be altered and used as a complete electrical department.

It was found that it lent itself admirably for this purpose, giving ample space not only for the present apparatus, but also for that required for superficial and deep therapy, a treatment which will have to be employed sooner or later. Unfortunately it was decided that it was not a suitable time to proceed with the suggestion. I trust that it has only been postponed.

The number of patients passing through the X-ray room during the year was 896, so that over 2,000 exposures were made. In addition, there were 1,333 electro-medical treatments, 2,240 artificial sunlight treatments, and of the latter, 1,020 were in the case of out-patients.

Infectious Diseases.

The outstanding feature was the outbreak of dysentery among children. I am very much indebted to the Deputy Medical Officer of Health, Dr. Charles, for his ready and valuable assistance in dealing with the outbreak. All cases in which the diagnosis was confirmed were removed to the City Hospital for Infectious Diseases.

The next most prevalent infectious disease was erysipelas, fourteen cases occurring. One nurse also had a very serious attack, the face being affected. She was given scarlet fever anti-toxin, and made a good recovery.

One case of typhoid fever occurred in the nursing staff, infection apparently having been acquired outside the hospital. All the nurses were inoculated against this disease, so that further trouble is unlikely.

There was a reduction in the cases of encephalitis lethargica treated, but a number became permanent, many of whom are bed-ridden. It appears to me that some special provision should be made for post-encephalitic patients.

Tuberculosis.

In the year under review 207 patients were treated, and of these 135 were pulmonary cases.

On the 1st April, 1930, the pulmonary cases were transferred to the sanatorium at the City Hospital, Walker Gate, and the whole of the top floor of the new block is now being used for patients suffering from surgical tubercle.

Many cases admitted as suffering from various conditions turn out subsequently to be really affected with tubercle, and have to be transferred to Walker Gate. This, I am afraid, is inevitable.

From the constant overtaking of the beds set aside for the treatment of tuberculous patients, it would appear that it will be necessary to make further provision. This type of case requires very long periods of treatment, in some extending to years, and in my opinion, these patients could, with advantage, after the active treatment has been given, be transferred to a convalescent home. Children form the majority of surgical tuberculosis patients.

Pulmonary tubercle has within recent years been coming into the hands of the surgeon, and suitable cases are being dealt with in hospital. These include plastic operations on the chest wall, section of the phrenic nerve, and cauterisation of pleural adhesions. All these have the same object, viz., the promotion, directly or indirectly, of collapse of the affected lung. This work, I should add, is being done in close co-operation with the tuberculosis medical staff.

Maternity.

During the year 94 cases were attended in the maternity ward, a reduction of 5 on the previous year, and of these 77·6 per cent. were married mothers. Quite a number were admitted as paying patients.

No arrangement has yet been fixed for the cases to be taken at the Princess Mary Maternity Hospital. It will be necessary also to provide accommodation for both ante- and post-natal cases, and it is very desirable that these should be under the care and management of the Health Committee.

The present arrangement for children under three years of age is most unsatisfactory, and I would urge that this be altered as soon as possible. The care of infants in health, I consider, is no easy matter, and certainly should be in the hands of a trained and skilled nurse. This matter has already been discussed, but certain difficulties have arisen. In my opinion, it is an urgent question, and should be dealt with without further delay.

Nursing Staff.

The following entered the service :—

- 30 Probationers—starting their training.
- 8 Staff Nurses.
- 2 Ward Sisters.
- 1 Theatre Sister.

The following left the service :—

- 11 Probationers, on completion of their training.
- 4 Staff Nurses.
- 1 Ward Sister.

Examinations.

The following are the results of the examinations held during the year :—

For the **Hospital Certificate**—27 nurses entered ; 27 passed. Of the above, 11 have since gained the C.M.B. Certificate.

State Examination : —

PRELIMINARY—28 nurses entered ; 28 passed.

FINAL—27 nurses entered ; 26 passed.

It may be of interest to record the fact that during 1930 eleven of those who completed their training have been appointed to sisters' posts in different parts of the country. The Matron keeps in touch with her old nurses, and is constantly being asked by other matrons to supply nurses to fill vacancies.

Staff Sickness.

During the year 34 members of the nursing staff were off duty on account of sickness—most of them for short periods. The complaint in practically one-third of the cases was a septic condition of the throat, and I find that this is most liable to occur in the first six months of the training.

The more serious cases were the following :—

1. One case of typhoid, treated at the City Hospital, with a good recovery.

2. One case of pulmonary tuberculosis, treated at Barrasford Sanatorium, also with a good recovery. The sister affected is now back on duty.

3. One case of erysipelas of the face, treated in the General Hospital, with a good recovery.

4. Two nurses required operation : one for a simple tumour, and the other for hernia. Both made excellent recoveries.

In the beginning of the year the Matron unfortunately had a nervous breakdown, and was granted sick leave. She returned to duty much improved in health.

As has been our experience for a number of years back, there is no scarcity of suitable candidates anxious to take up nursing as a profession. The type also applying is for the most part suitable, and the number allows of a selection being made.

In concluding this report I desire to place on record the conscientious work performed by the staffs of all the departments in the hospital.

ADMISSIONS AND DISCHARGES FOR THE YEAR 1930.

	<i>Males.</i>	<i>Females.</i>	<i>Children.</i>	<i>Total.</i>
Admissions	1,229	1,120	699	3,048
Discharges	1,286	1,116	697	3,099
Of the Discharges—Cured				1,204
Relieved				1,281
Died				614
				<hr/>
			Total	3,099
				<hr/>

TABLE OF AGES OF PATIENTS TREATED.

Men over 60	479
Women over 60	292
Men under 60	807
Women under 60	824
Boys 3–16	167
Girls 3–16	178
Children under 3	352
	<hr/>
	3,099
	<hr/>

TRANSFERS FROM OTHER HOSPITALS, HOMES AND UNIONS.

From Royal Victoria Infirmary	17
From Cottage Homes, Ponteland	4
From Prudhoe Hall Colony	11
From Harton Hospital, South Shields.....	35
From Tudhoe Homes	1
From Shotley Bridge Colony	7
From Other Unions, etc.....	9

PRIVATE CASES ADMITTED FOR TREATMENT 67

RETURN OF MENTAL CASES TREATED.

Admitted during the year—Males	181
Females	169
	<hr/> 350 <hr/>

RESULTS OF TREATMENT.

	<i>Males.</i>	<i>Females.</i>	<i>Total.</i>
Cured	26	8	34
Improved.....	42	35	77
I.S.Q.	7	3	10
To Mental Hospital	63	81	144
To Newcastle General Hospital	28	23	51
To Aged and Infirm Wards ...	—	4	4
To House—Chronic	6	4	10
To House	1	2	3
Died	4	2	6
Carried forward to 1931	4	7	11
Totals	<hr/> 181 <hr/>	<hr/> 169 <hr/>	<hr/> 350 <hr/>

RETURN OF CASES TREATED IN X-RAY AND MASSAGE DEPARTMENT.

MEDICAL.

	<i>Massage.</i>	<i>Medical Electricity.</i>	<i>X-Ray.</i>	<i>Sunlight.</i>
Treatments	1,701	1,333	896	2,240

CLASSIFIED LIST OF DISEASES TREATED.

Circulatory	260	Observation (<i>b</i>)	33
Respiratory	283	Blood	13
Pneumonia	129	Chorea	14
Nervous	216	Myxœdema	1
Digestive	99	Aneurism	5
Rheumatic.....	60	Cretinism	1
General (<i>a</i>)	75	Hydrocephalus	2
Excretory	78	Liver	7
Mental	8	Sciatica	1
Mental Deficiency	3	Arthritis.....	22
Lumbago	5	Diabetes.....	23
Rickets.....	5	Herpes Zoster.....	1
Alcoholism.....	5	Scurvy	2
Exophthalmic Goitre	1	Internal Parasites	5

(*a*) Includes chiefly senile cases and those diagnosed as “Debility.”

(*b*) Chiefly observation for tuberculosis and mental condition.

DISEASES OF SPECIAL SYSTEMS.

Skin	42	Eye	22
Contagious Skin	60	Throat, Nose and Ear.....	61
Venereal.....	67		

TUBERCULOSIS.

Of the Lungs.....	135	Other Forms	72
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PREGNANCY AND DISEASES OF WOMEN AND CHILDREN.

Pregnancy	112	Nursing	89
Puerperal Sepsis	4	Prematurity	8
Albuminuria	2	Marasmus	1
Abortions.....	39	Other Conditions	12
Diseases of Women	52		

INFECTIOUS DISEASES.

Measles.....	4	Cerebro Spinal Meningitis	2
Whooping Cough	11	Erysipelas	14
Chicken Pox	1	Scarlet Fever	3
Influenza	9	Malaria.....	2
Dysentery	37	Paratyphoid	2
Encephalitis Lethargica	15	Varicella	1
Mumps	6	Vaccinia	2
Diphtheria	2	Meningitis	2
Typhoid Fever	1		

SURGICAL.

Carcinoma	116	Bladder	3
Sarcoma	7	Burns	9
Septic Conditions	129	Gangrene	6
Abdominal Conditions	142	Phlebitis	2
Fractures and Dislocations	57	Joints	7
Injuries, Wounds and Sprains ..	29	Brain and Spinal Cord	7
Hæmorrhoids	15	Empyema	9
Post-Operative	12	Deformities	8
Varix	1	Teeth	27
Bone Disease.....	13	Bursitis	6
Gland Disease	6	Simple Tumour.....	5
Male Generative Organs	26	Prostate	21
Rectum	15	Others	4

OPERATIONS.

Hernia (varieties)	41	Fissure-in-Ano	8
Gastroenterostomy.....	23	Craniotomy	1
Appendicectomy.....	29	Trephining Skull	1
Laparotomy	6	Mastoidectomy	3
Anastomosis	3	Sequestrectomy	8
Colostomy	1	Osteotomy	3
Cholecystotomy	8	Resection of Rib	11
Cholecystectomy	5	External Urethrotomy	1
Salpingectomy	4	Amputations	5
Perinephritic Abscess	3	Bone Graft	4
Intussusception	1	Tracheotomy.....	4
Gastrotomy	2	Skin Grafting	2

OPERATIONS—*continued.*

Hysterectomy	3	Excisions (varieties).....	23
Thoracotomy	1	Cæsarean Section	1
Phrenicectomy	1	Re-suturing Wounds	3
Ventro-fixation	2	Manipulations, Joints	2
Ovariectomy	3	Radium Treatment	5
Prostatectomy	4	Tonsils and Adenoids	55
Supra-pubic Cystotomy	7	Teeth Extraction	45
Thyroidectomy	1	Incisions (varieties)	85
Hydrocele	4	Examinations	31
Varicocele	1	Fracture Set	1
Hæmorrhoids	16	Cystoscopy	21
Curettage	50	Tuberculous Abscess	20
Phimosis	12	Deformities, etc.	8
Colpoperineorrhaphy	8		
Lithotomy	2		596

GEO. P. HARLAN, M.D., CH.B., D.P.H., B.HY.

Medical Superintendent.

*Newcastle General Hospital,
6th June, 1931.*

MAINTENANCE IN OTHER INSTITUTIONS.

At the time of the transfer of the Poor Law to the Corporation ten persons were being maintained by the Guardians in various special institutions in different parts of the country. One of these cases was returned to her relatives in October, 1930, and the number at the close of the year was nine. The cases were as follows :—

Institution.	M.	F.	Type of Case.
Home for Epileptics, Maghull	1	1	Epileptics.
St. Elizabeth's School for Epileptics, Much Hadham .....	..	2*	Epileptics.
Home for Crippled Children, Gosforth St. Vincent's Hospital for the Dying, Liverpool	1 ..	.. 1	Infantile Paralysis. Advanced Phthisis.
St. John's Institution for the Deaf and Dumb, Boston Spa .....	.. ..	1 1	Blind, Deaf and Dumb.
St. John's Home, Birmingham .....	..	1	Deformity.
Hospital of St. John of God, Scorton..	2	..	Cripples.
TOTAL	4	6	

* One of these discharged in October, 1930.

REPORTS OF THE VETERINARY OFFICER
AND INSPECTOR OF PROVISIONS,
AND OF THE INSPECTOR UNDER THE FOOD AND
DRUGS ACTS (SENIOR SANITARY INSPECTOR).

VI.—FOOD.

BOVINE TUBERCULOSIS.
INSPECTION OF MEAT AND PROVISIONS.
INSPECTION OF FOOD AND DRUGS.

BOVINE TUBERCULOSIS, AND THE INSPECTION OF MEAT AND PROVISIONS AND FOOD AND DRUGS.

TUBERCULOUS MILK.

During the year 16 samples were reported by the Bacteriologist to contain tubercle bacilli. The samples were obtained from 10 different farms, five of which were in Northumberland, two in Durham, one in Cumberland, and two in Dumfriesshire. The results of the investigations at the farms may be summarised as follows :—

Cases in which tuberculous cows were found (subsequent check samples were negative)	8
Case in which tuberculous cows were not found on first examination, but subsequent check sample was positive. (Further in- spection showed one cow tuberculous) .	1
Case in which tuberculous cows were not found (subsequent check sample negative)	1
	—
	10
	—

Year.	Percentage of Samples found Tuberculous.
1907	5.9
1908	3.8
1909	9.0
1910	5.4
1911	3.0
1912	10.4
1913	8.4
1914	6.7
1915	5.8
1916	8.7
1917	3.1
1918	2.9
1919	3.6
1920	6.3
1921	5.5
1922	7.0
1923	4.5
1924	3.2
1925	8.0
1926	4.0
1927	3.7
1928	3.7
1929	8.7
1930	4.2

Report of the
Veterinary Officer, Inspector of Meat, etc.

TO THE MEDICAL OFFICER OF HEALTH.

I have pleasure in submitting the following Report which includes the work of inspection under the Public Health Acts during the year 1930.

DISEASES OF ANIMALS.

Diseases of Animals Acts, 1894-1927.

During the year, six outbreaks of scheduled diseases occurred amongst the animals within the City, as compared with seven outbreaks during the previous year. Four of the outbreaks were due to disease communicable from animal to man.

Tuberculosis.

During the year, within the registered cowsheds, four animals were found affected with one of the forms of the disease which requires them to be dealt with under the Tuberculosis Order of 1925. In each case, immediately the disease was detected, the milk was excluded from the public supply. The animals were slaughtered, and the owners compensated according to the value of the animal before slaughter, as agreed upon by the Veterinary Officer, on behalf of the Corporation, and the owner, in accordance with the Order. In every case the animal was found to have been suffering from Tuberculosis advanced, necessitating the destruction of the entire carcass and internal organs, as unfit for human consumption.

When the total amount paid as compensation to owners, costs for slaughtering, etc., was deducted from

the amount obtained through the disposal of carcasses, hides, offal, etc., together with the amount recoverable from the Ministry of Agriculture, there remained a balance of 2s. 3d. in favour of the Corporation on the administration of the Tuberculosis Order during the year.

In the course of meat inspection within the City during the year, 576 animals were found, on slaughter, to be affected with the disease, this being an increase of 28 per cent. as compared with the number found diseased during the previous year.

In 410 cases some part of the carcass or internal organs of each was condemned and destroyed, whilst in the case of each of the remaining 166 animals, it was found necessary, owing to the extent and distribution of the disease, to destroy the entire carcass and internal organs. Although the number of carcasses of beef condemned annually for tuberculosis has gradually increased from 102 to 124 during the past five years, experience indicates that were the animals slaughtered under centralised conditions, there would be excluded from the market quantities of diseased meat and offal derived from the carcasses, which under present conditions cannot be inspected at the time of slaughter.

Tuberculosis in the Sheep.

During the year a case of tuberculosis as affecting the sheep (ewe) was met with in one of the slaughterhouses, this being the first case known to have occurred within the City. When the specimen (spleen) was submitted to the Veterinary Officer for diagnosis, neither the carcass nor the remainder of the offal were available for examination owing, unfortunately, to their having been removed previously, and could not be traced. On examination, the lesions were found typical of the

disease, and similar in form to those sometimes met with in tuberculosis as affecting the same organ within the pig. Although this is the first case to be recorded as occurring within the City, only seven cases have been recorded previously as occurring within this country: the first being in 1898, and the last as recently as 1928.

Anthrax.

Although no case reported during the year came within the category of suspected anthrax, it was deemed advisable, as a precautionary measure, to examine, microscopically, material from the carcasses of six animals slaughtered within the City, and which presented evidence of imperfect bleeding. In none of the cases, however, was the disease found present.

Within Great Britain 391 outbreaks of the disease were confirmed, in which 443 animals were attacked, as compared with 439 outbreaks during the previous year, in which 529 animals were attacked.

Rabies.

During the year no case, as suspicious of this disease, has been reported for investigation within the City. About 36 years ago, *i.e.*, in 1895, no fewer than 672 cases of Rabies, as affecting dogs, were reported as occurring in 29 counties. As hydrophobia in man is usually contracted through the bite of a rabid dog, the great protection to public health by eliminating the disease from the lower animals was well demonstrated during the following six years by reason of the fact that in 1901 only one case occurred in one county. The judicious application of muzzling restrictions from time to time, together with the permanent application of quarantine restrictions regarding imported canine and feline animals, have had the desired effect, for no case of rabies has occurred within the country since 1922.

LIVE STOCK AND MEAT SUPPLIES.

Although cattle, sheep, and pigs within Great Britain have slightly decreased numerically during the past two or three years, the numbers of cattle and sheep at the present time exceed those recorded about ten years ago by half a million and three millions, respectively. The number of pigs, on the other hand, has, during the same period, averaged a little over two and a half millions. Fifty years ago the population of Great Britain totalled 29,710,002, and at that time there were about 5,900,000 cattle, 25,000,000 sheep, and nearly two and a half million pigs within the country. The available meat supplies from these animals were supplemented by the importation, annually, of approximately 300,000 cattle, 900,000 sheep, 24,000 pigs, besides 6,800,000 cwts. of meat (one-fifth being pork, bacon and hams). Since that time the population has gradually increased until it has become 50·7 per cent. greater, having now reached a total of 44,790,485. During the same period, of our home bred animals, cattle have increased by 18·3 per cent., sheep have decreased by 4·16 per cent., whilst pigs have remained practically stationary so far as numbers are concerned. As the amount of meat available from cattle is considerably greater than from sheep, individually, the total meat supplies available from our home bred stock is greater than 50 years ago, but proportionately less per head of population, because of the more rapid increase of the latter. Further, whilst the imports of cattle, sheep and pigs from foreign countries were gradually reduced to nil, the gradually increasing imports of fresh, frozen and chilled meat food-stuffs have succeeded to some extent, if not completely, in filling up the ever increasing gap created in this country between the demand and home-killed meat

supplies. These annual imports increased from about 6,800,000 cwts. in the year 1881 to 30,861,000 cwts. in 1923, but since then there has been a gradual decline until 1929, when 28,871,000 cwts. were imported. It will be obvious, therefore, that the incentive to produce more meat foodstuffs within our own country is likely to increase.

Inspection of Meat and Other Foods.

The number of animals slaughtered within the City for food purposes was 160,271, this being a decrease of 9,906, as compared with the total number for the previous year. The decrease occurred with pigs only, as cattle and sheep showed an increase of 1,764, and 4,500 respectively. The number of cattle slaughtered was the highest total recorded during the past five years.

Of the carcasses and internal organs examined, including those dressed outside, and sent into the City for disposal, tuberculosis was found present in those of 576 animals, an increase of 28 per cent., as compared with the previous year.

486 animal carcasses, together with 2,067½ lbs. of meat (excluding offal, etc.), were condemned and destroyed as being unfit for human consumption, as compared with 500 animal carcasses and 1,923½ lbs. of meat condemned and destroyed during the previous year. Of the 486 carcasses, 169¾ carcasses and 15 quarters were condemned on account of tuberculosis, as compared with 159 (158 carcasses and 4 quarters) condemned on account of that disease out of the previous year's total of 500 carcasses.

Whilst the total number of cattle slaughtered was 19,823, or an increase of 1,764 as compared with the previous year, it may be of interest to observe that the number

of whole carcasses from these animals condemned and destroyed on account of tuberculosis, was 5·08 per cent. larger than the number destroyed for that disease during the previous year ; whereas those condemned and destroyed for conditions other than tuberculosis showed an increase to the extent of 283·3 per cent.

For the purposes of the Public Health (Meat) Regulations, 1924, 3,051 visits were made to meat and provision shops, restaurants, stalls, vehicles, etc., and, as a result, 29 contraventions were discovered and dealt with. In each of three cases the contravention concerned the opening of a W.C. directly into a room used for the preparation and storage of food. In 17 cases it was necessary to enforce measures for the prevention of food being exposed to the risk of contamination. In three cases butchers were warned against the use of slaughter houses for the purpose of gut-scraping, whilst in six cases slaughter-men were warned against the practice of meat-blowing. It should be noted, however, that in every instance, following the written or verbal request, the offence complained of immediately ceased.

Imported Foodstuffs.

During the year 337 vessels, carrying foodstuffs from Denmark, Norway, Sweden, Holland, Canada, Australia and America, arrived at the Quayside, this being an increase of 33, as compared with the number of arrivals during the previous year.

Whilst a year ago the number of cases of bacon and ham imported from America had decreased by fifty per cent., as compared with the previous year, one has to report that during the year under review there has been an increase of not only American bacon and ham, but also of tinned meats, to the extent of approximately

16 and 57 per cent. respectively. The number of sides of bacon from Denmark also show an increase—1,061,427 having been imported, as compared with 1,006,216 sides imported during the previous year. It will be observed that the latter increase is equivalent to 27,600 large pigs.

Four hundred and twenty-one visits were made to the wharves and vessels alongside, 2,413 packages, containing meat, etc., being opened and examined. Regarding these visits, two were in response to official notices received from the Customs House concerning foodstuffs detained by the Customs officials for our inspection and certification.

All imported meat arriving by rail within the City is subjected to inspection and supervision within the wholesale shops and cold storage depots.

Caseous Lymphadenitis.

Owing to the prevalence of this disease in the flocks of exporting countries, a systematic inspection of all imported carcasses of mutton arriving within the City has been made, irrespective of whether they had been examined at the ports of landing. When carcasses intended for the City are landed at London or Liverpool, notification is invariably received from the port concerned. From time to time, however, carcasses not so notified arrive, and these are usually notified by the firms concerned for the purpose of inspection being carried out.

During the year a total of 55,756 carcasses of imported mutton (equivalent to one-half of the number of sheep slaughtered within the City) were notified, comprising 53,106 in 205 separate consignments from New Zealand, Australia and South America, *via* Liverpool and London; and 2,650 in one consignment from Australia, which arrived by vessel at the Quayside.

Of the total, 7,926 were examined, 55 being found diseased, and therefore condemned and destroyed. Of the 55 diseased carcasses, 11 were from consignments concerning which no notification had been received from the ports of landing. All the diseased carcasses were from South America.

Exported Foodstuffs.

The number of horses slaughtered within the City, for the purpose of the carcasses being exported for consumption on the Continent, was 2,784, or 677 more than during the previous year.

For the purpose of regulations made by the Commonwealth of Australia, the Dominion of Canada, and the United States of America, respectively, concerning the importation into those countries of various kinds of cooked foodstuffs derived from the meat of animals slaughtered within or slaughtered outside, and imported into Great Britain, 35 certificates were granted during the year to a wholesale meat preserving firm within the City, concerning the wholesomeness and freedom from disease of materials used in the preparation of consignments for export.

Slaughterhouses.

During the year, 99 separate premises were licensed for slaughtering purposes, this being three fewer than in the previous year. The reduction was due to four slaughterhouses included in one of the Dispensary Lane groups being removed and replaced by one new compartment, because of their having become dangerous through dilapidation.

The total comprises five groups and a number of separate establishments in various parts of the City.

Four of the premises are used exclusively for the purpose of horse slaughtering, whilst two near the river in the St. Lawrence district, are licensed and used as knackers' yards.

The provision of a modern establishment for centralised slaughtering is under consideration by the Committee concerned, but, unfortunately, the progress desired has not been made, owing to the difficulties presented concerning the question of site.

The new slaughterhouse bye-laws have now been rigidly enforced for more than a year, and as more than 160,000 animals were slaughtered during the year, it is satisfactory to be able to report that no complaints have been received concerning the condition of the carcasses because of the use—in the process of killing—of mechanically operated instruments.

Microscopical Examinations.

During the year, microscopical examinations were carried out, as an aid or confirmation of diagnosis, in connection with twenty-three cases under investigation. The material examined comprised specimens of milk, blood, tissues, and swabs taken from the throats of cows. Of the samples of milk examined for tuberculosis, two were found positive and eight negative; and of the swabs examined for the same purpose, two were positive and four were negative. In none of the specimens of blood examined for anthrax was that disease found present. In one case only was the examination made for parasites, the result being positive.

Rats and Mice (Destruction) Act, 1919.

During the year, 64 visits were made to premises in respect of complaints received, and to other premises involved.

Of the 115 separate premises dealt with, rats were found infesting 64, the remaining 51 being found free from the pests. The occupiers have used poisons and traps with considerable success, so far as the killing of the pests is concerned. When, however, buildings are not impervious to invasion, because of defective party walls, ventilators, pipe outlets, etc., the killing or trapping of rats within such buildings simply means minimising the work at the source of supply. The problem of rat prevention is one that almost always involves building construction and repair; providing, of course, that reasonable measures are observed regarding the means of destruction and the prevention of access of the pests to edible material and places of harbour external to the buildings. For the success of administration much reliance is placed on the results to be obtained by educating the occupiers not only as to rendering premises structurally independent, one from the other, but also as to the necessity for all occupiers to be operating simultaneously.

The Milk and Dairies Order of 1926.

Within the City there are 17 cow-keepers, who occupy 28 cowsheds on 18 premises, and possess a total of 251 milch cows. During the year 187 visits were made to the cowsheds and dairies for the purpose of inspecting the buildings, and the conditions as to cleanliness, etc.

DISEASED COWS FOUND IN REGISTERED PREMISES WITHIN THE CITY.

Year.	No. of Cow-keepers.	No. of Registered Cowsheds.	No. of Dairy Premises.	No. of Milch Cows in City.	No. of Diseased Cows.				
					Tuberculosis		Other Diseases		Destroyed. (under the Tuberculosis Order, 1925)*
					Of Udder.	Other than Udder.	Udder.	Other than Udder.	
1909	41	..	..	527	5	2	4	1	5
1910	38	41	..	503	1	1	8	..	1
1911	37	44	38	497	1	..	4	..	1
1912	37	44	37	465	2	..	1	..	..
1913	31	43	33	489	2	2	..	..	..
1914	31	43	33	510	1	1	1	..	..
1915	31	43	33	554	3	..	6	..	..
1916	30	41	32	536	2	2	12	..	1
1917	30	44	32	512	1	..	..	..	..
1918	29	43	31	622	..	..	..	..	..
1919	27	41	29	594	..	..	..	..	..
1920	26	40	28	565	..	..	..	..	..
1921	25	38	26	575	..	..	..	..	..
1922	25	39	26	489	..	..	..	..	..
1923	25	39	26	484	2	..	8	..	1
1924	22	34	23	436	3	2	2	..	4
1925	21	33	23	337	9	..	1	..	3*
1926	20	31	21	410	5	2	1	3	5*
1927	18	29	19	334	2	4	2	3	6*
1928	19	31	20	308	3	1	1	3	4*
1929	19	30	20	258	4	1	1	2	4*
1930	17	28	18	251	2	3	1	4	4*

NUMBER OF ANIMALS EXHIBITED WITHIN THE NEWCASTLE CATTLE MARKET.

Year.	Cattle.	Calves.	Sheep.	Swine.	† Dairy Cows.
1887	110,074	8,780	325,473	28,964	—
1897	99,084	7,304	340,382	31,798	—
1908	87,447	8,145	302,608	38,466	—
1909	85,110	6,950	323,780	31,189	—
1910	77,347	6,469	306,703	27,089	—
1911	70,337	5,841	305,418	37,754	—
*1912	48,222	4,646	227,046	32,562	—
1913	63,683	4,455	271,887	27,468	—
1914	55,617	4,376	258,976	26,507	—
1915	53,689	3,677	248,291	25,062	—
1916	52,251	980	248,356	23,796	—
1917	47,906	1,192	216,920	15,474	—
1918	32,948	42	201,071	148	—
1919	33,664	329	145,613	89	—
1920	32,577	2,064	129,606	5,923	—
1921	35,000	1,765	210,000	1,154	—
*1922	21,921	1,432	140,389	16,521	278
*1923	28,828	1,665	138,447	5,545	99
*1924	18,555	458	68,654	15,684	—
1925	31,397	1,394	135,468	3,302	512
1926	29,368	755	147,461	893	413
1927	32,697	1,318	182,409	1,045	500
1928	33,531	1,585	201,825	2,644	395
1929	34,697	1,796	197,225	2,189	392
1930	36,262	1,614	205,096	2,640	311

The Market Day was changed from the Tuesday to the Monday of each week as from 31st July, 1922.

* Market closed for some time during each of these years owing to extensive outbreaks of Foot-and-Mouth Disease in the district.

† Milch Cows sold on Fridays within the Cattle Market lairs.

ANIMALS SLAUGHTERED ON LICENSED PREMISES WITHIN THE CITY.

YEAR 1930.	1929.	1928.	1927.	1926.
Horses 2,784	2,107	1,747	1,740	1,416
Cows 1,391	18,059	17,513	19,246	17,970
Heifers ... 13,014				
Bulls 431				
Bullocks .. 4,987				
Calves 5,242	4,843	4,299	5,249	4,764
Sheep 107,997	103,497	121,005	137,120	104,065
Pigs 24,425	41,671	46,964	42,849	34,427
Total Animals 160,271	170,177	191,528	206,204	162,642

Cattle, Calves and Pigs Slaughtered within the City. (See also previous Table).	Number of Animals found Diseased, Unsound or otherwise unfit for Human Consumption.		*Number of Animals found Tuberculous.	
	Whole Carcasses Condemned.	§ Parts or Organs Condemned.	Whole Carcasses Condemned.	† Parts or Organs Condemned.
Year 1930.	Year 1930.			
Cows 1,391	84	68	71	58
Heifers .....13,014	44	50	38	45
Bulls 431	3	1	3	1
Bullocks 4,987	16	47	12	33
Totals 19,823	147	166	124	137
Calves 5,242	46	16	6	—
Pigs 24,425	77	344	36	201

† Sex not known, 72.
§ „ „ 428.

* The figures representing the numbers of animals found tuberculous on slaughter do not necessarily indicate the total number of animals affected with disease, because under the present slaughter-house system it is impossible to guarantee that all those slaughtered are subjected to inspection.

CARCASSES OF BEEF CONDEMNED WITHIN THE CITY DURING THE
PAST TWENTY-ONE YEARS.

Total Condemned.		Numbers condemned on account of Tuberculosis.	Percentage Tuberculous.
Year.	Carcasses.	Carcasses.	Per Cent.
1910	116	110	94·82
1911	88	79	89·77
1912	79	73	92·40
1913	92	89	96·73
1914	83	70	84·43
1915	96	88	91·66
1916	109	103	94·49
1917	98	92	93·87
1918	230	182	79·13
1919	306	267	73·0
1920	198	171	86·36
1921	90	78	86·66
1922	85	79	92·94
1923	69	58	84·05
1924	66	61	92·42
1925	157	130	82·80
1926	126	102	80·95
1927	123	107	86·99
1928	115	109	94·78
1929	124	118	95·16
1930	147	124	84·35

NOTE.—The above refers to whole carcasses and quarters, but does not indicate the total number of animals found tuberculous, and therefore does not include those carcasses in which only the organs or parts were found diseased and condemned. See preceding table.

NUMBER OF VISITS AND INSPECTIONS OF PREMISES DURING THE YEAR 1930.

Slaughter Houses.	Central Markets.			Meat Shops.		Fish Shops.		Provision Shops.		Fruit Shops.		Wharves and Vessels.	Cold Stores.	Goods Stations (Fish Docks).	Restaurants.	Stalls, Carts, etc	Fish Curing Establishments.
	Meat and Provisions.	Fruit and Vegetables.	Fish.	Wholesale.	Retail.	Wholesale.	Retail.	Wholesale.	Retail.	Wholesale.	Retail.						
15,681	451	362	347	3,721	1164	63	12	15	3	5	2	421	130	2	64	1369	5

Foreign Meat, etc., Arriving by Vessel.*Fresh Offal, etc. (Packages).*

PIG.—3,929 feet, 2,356 maws, 1,540 heads, 59 cheeks, 1 tongues, 1 plucks, 14 rinds and 237 sausages.

Salted Meat.

PORK.—282 barrels.

Frozen Meat.

BEEF.—1,500 hind quarters. Packages.—2,500 crops and 200 boneless shin beef.

Offal (Packages).—100 livers, 100 hearts, 300 kidneys and 32 skirts.

MUTTON.—2,663 carcasses and 25 packages sweet-breads.

PORK.—651 carcasses. Packages.—223 loins and 100 kidneys.

Other Goods.

1,061,427 sides Danish bacon. Cases.—7,928 American bacon and hams, 47,113 tinned meats and 303 sausages.

NUMBER OF VESSELS AND ORIGIN, ARRIVING WITH FOOD.

Denmark.	Holland.	Norway.	America.	Canada.	Sweden.	Australia.
105	151	7	11	14	48	1

IMPORTED CARCASSES OF MUTTON EXAMINED FOR
CASEOUS LYMPHADENITIS.

Year.	Number of Separate Consignments.	Number of Carcasses.	Number of Carcasses Examined.	Number of Carcasses Condemned.
1928	3	1,615	1,615	118
1929	102	28,145	3,945	110
1930	206	55,756	7,926	55

Total Weight of Meat and Other Foodstuffs Condemned.

The approximate total weight of meat and other foodstuffs condemned during the year was 76 tons 18 cwts. 3 qrs. 15 lbs., comprising :—

	tons.	cwts.	qrs.	lbs.
Beef, Mutton, Veal, Pork	57	1	3	22
Offal, Provisions, etc.....	19	16	3	21
	76	18	3	15

RATS AND MICE (DESTRUCTION) ACT, 1919.

Complaints received	53
Number of Premises inspected and dealt with in connection with the above.....	115
Number of Visits	64
KIND OF PREMISES DEALT WITH.	
Dwellings	58
Shops (Retail)	27
Stables	6
Café	1
Offices	3
Hotels	2
Waste Ground	1
Warehouses.....	6
Sheds	3
Public Houses.	2
Laundry	1
School	1
Railway Premises..	1
Hospital	1
Manufactory	1
Tripery	1
Total	115

POULTRY, GAME, FISH, FRUIT AND VEGETABLES, PROVISIONS, &c., DESTROYED AS BEING UNFIT FOR HUMAN CONSUMPTION
DURING THE YEAR 1930.

Cause of Unfitness.	Poultry and Game.	Fish.	Fruit and Vegetables.	Provisions, &c.
Unsound and Unwholesome.	Black Game . 13 Chickens . . . 35 Capercalzie . 43 Fowls 20 Hares 3 Pheasants . . 1 Rabbits 230 Turkeys 3 Wild Birds . . 44	lbs. Cod 661 Dab 129 Fillets (cases) 4 . . Haddocks 1,526 Halibut 3+46 Kippers 42 Megrin 84 Plaice 7,220 Roe 1,260 Salmon 2+131 $\frac{1}{4}$ Skate 720 Sole 336 Trout 37 $\frac{1}{2}$ Whiting 84 SHELL. Prawns 3 tins+68	Lettuce 10 crates Potatoes 4,320 stones Tomatoes 6 deeps+21 lbs.	Bacon—16 fores+ 1,016 lbs. Brawn 150 Confectionery . . . 1,120 Hams 13+ 118 Muffets (82 cartons) Pork Roll 3 Shelloni (4 cases) Veal 54 TINNED GOODS. Tins. Cream 6 Ham and Tongue Paste 5,040 Milk 3,646 Lunch Sausage . . . 12 Prunes 50 lbs. Breakfast Rolls . . 648 Corned Beef 8,831 Carrots 8 Ham 35 Lunch Tongue . . . 458 $\frac{3}{4}$ Meat Roll 45

INSPECTION OF CARCASSES SENT INTO THE CITY FROM OUTSIDE DISTRICTS
DURING THE YEAR 1930, INCLUDING THE CARCASSES OF ANIMALS TAKEN
UNDER THE TUBERCULOSIS ORDER, 1925, BY OTHER LOCAL AUTHORITIES AND
SLAUGHTERED WITHIN THE CITY.

Material Examined.	Condition Found.	How Dealt With.
*Cow Carcass and Organs ..	Tuberculosis	Carcass and Organs condemned
„ 4 qrs. and „ ..	Do.	Organs condemned.
* „ Carcass and „ ..	Do.	Carcass and Organs condemned
Heifer 4 qrs. and „ ..	Normal	Passed.
Bullock Carcass and Organs	Tuberculosis	Carcass and Organs condemned
Cow „ „	Normal	Passed.
* „ „ „	Tuberculosis	Carcass and Organs condemned
Heifer „ „	Do.	„ „ „ „
*Cow „ „	Do.	„ „ „ „
„ 4 qrs. „ „	Normal	Passed.
*Cow Carcass and Organs ..	Tuberculosis	Carcass and Organs condemned
* „ „ „ ..	Do.	„ „ „ „
„ „ „ ..	Normal	Passed.
Heifer „ „	Liver and Kidneys congested	Liver and Kidneys condemned
*Cow „ „	Tuberculosis	Carcass and Organs condemned
„ „ „ ..	Do.	Lungs condemned

* Slaughtered under the Tuberculosis Order, 1925. Certificate of result of examination in each case supplied to the Local Authority concerned.

CARCASSES, &C., DESTROYED AS BEING UNFIT FOR

	Carcasses, &c.				Lungs.			Hearts.			Kidneys.		
	Beef.	Veal.	Mutton.	Pork.	Sets Ox.	Sets Sheep.	Sets Pig.	Ox.	Sheep.	Pig.	Ox.	Sheep.	Pig.
Tuberculosis	124 + 15 qrs.	6	..	36	168	..	9	25	..	1	1	..	..
Caseous Lymphadenitis ..	..	..	55	..	..	..	..	..	..	..	..	..	..
Swine Fever .....	..	..	..	2	..	..	..	..	..	..	..	..	..
Swine Erysipelas .....	..	..	..	1	..	..	..	..	..	..	..	..	..
Actinobacillosis .....	..	..	..	..	..	..	..	..	..	..	..	..	..
Pyrexia .....	..	..	..	3	..	..	..	..	..	..	..	..	..
Pyæmia .....	..	..	1	..	..	..	..	..	..	..	..	..	..
Septic Pericarditis.....	2	..	1	..	3	..	..	5	..	..	..	..	..
Other Septic Conditions ..	4+4 qrs. + 175 lbs.	5	4+9 lbs.	1	5	4	..	1	..	..	2	..	..
Uræmia .....	..	..	..	1	..	..	..	..	..	..	..	..	..
Jaundice .....	..	..	..	1	..	..	..	..	..	..	..	..	..
Melanosis .....	..	..	..	..	1	..	..	..	..	..	..	..	..
Lymphadenoma.....	..	..	2	..	..	..	..	..	..	..	..	..	..
Fatty Degeneration .....	..	..	..	..	..	..	..	..	..	..	..	..	..
Pneumonia .....	..	..	..	..	8	1	21	..	..	..	..	..	..
Pleurisy .....	..	..	1 qr.	..	18	..	9	1	..	..	..	..	..
Peritonitis .....	..	..	1	2	..	..	..	..	..	..	..	..	..
Pleurisy and Peritonitis ..	3	..	2	1	..	..	..	..	..	..	..	..	..
Mastitis .....	..	..	1	..	..	..	..	..	..	..	..	..	..
Cirrhosis .....	..	..	..	..	..	..	..	..	..	..	..	..	..
Arthritis .....	..	1	..	..	..	..	..	..	..	..	..	..	..
Cavernous Hæmangioma ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Œdema and Emaciation ..	4	..	39	3	..	..	..	..	..	..	..	..	..
Parasites (distomatosis, cysts, etc.) .....	..	..	..	..	5	25	..	..	..	..	..	..	..
Imperfect Bleeding, Con- gestion, etc.	4+4 qr.	9	49	17	..	..	28	..	..	..	1	..	2
Immaturity .....	..	4	..	..	..	..	..	..	..	..	..	..	..
Traumatism	400½ lbs.	..	5+2 qrs. + 22 lbs.	50 lbs.	..	..	..	1	..	..	..	..	..
Decomposition	4+1287 lbs.	21+ 4 qrs.	48+ 6 qrs. +114 lbs.	9+4 qrs. + 10 lbs.	9	12	2	3	133 + 56 lbs.	..	448 lbs.	2+ 210 lbs.	14 lbs

HUMAN CONSUMPTION DURING THE YEAR 1930.

Livers.			Heads.			Plucks.			Cow's Udders.	Pig Feet.	Ox Tongues.	Ox Tails.	Ox Tripe.	Pig Maws.	Pig Stomachs and Intestines.	Sausage Casings.	Ox Fat.	Sweet-bread.		Sheep Spleen.
Ox.	Sheep.	Pig.	Ox.	Sheep.	Pig.	Calf.	Sheep.	Pig.										Calf.	Sheep.	
82	..	144	..	147 + 13 halves.	..	..	54	..	..	..	..	..	..	..	3	..	4 + 3 lbs.	..	..	1
..	56	..	..	..	..	..
..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
..
..
41	2	..	1	..	1	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..
..
..
..
2
..	1	4	4	..	..	..	..	..	..	..	..	..	..	..	..
..	5	6	..	..	..	..	..	..	..	..	..	..	..	..
..
..	5	..	..	..	..	..	..	..	..	..	..	..
247 + 24 lbs.	50	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..
4
..
11 + 10 lbs.	193	8	..	..	..	..	81	15	..	..	..	..	..	..	..	..	..	..	..	..
1	1	8	2	..	..	..	..	..	..	..	..	..	..	..	..
..
2
12	19 + 25 lbs.	21	9	50	5½ + 22 cwts.	14	136	11	..	2 cwts	3 + 24 lbs.	40	533 lbs.	30 cwts	..	28 lbs.	..	42 lbs.	20 lbs.	..

Yours faithfully,

Town Hall,
Newcastle-upon-Tyne,
8th August, 1931.

THOMAS PARKER, F.R.C.V.S.,
Veterinary Officer.

FOOD AND DRUGS ADULTERATION, Etc.

Total Samples.—The number of samples of foods and drugs obtained for analysis during the year was 1,155, as compared with 1,172 in 1929. They were of a varied nature, and included most articles in common use in the household. Of this number 634 were submitted to the Public Analyst, the remainder being samples of milk which were tested in the office and found to be genuine.

Informal Samples.—258 informal samples were taken as against 378 last year. Although legal proceedings cannot be taken in the event of such a sample not being genuine, this method is a guide to the general quality of food stuffs sold in any particular district. Any adulterated samples are followed up by taking “formal” or “official” samples, so that legal proceedings may be taken if necessary.

Milk Samples.—As usual, the greatest number of samples obtained has been of milk, one of the most important articles of food, and one which unfortunately lends itself to fraudulent practices. 873 samples were taken, and of these only 19 were certified to be below the minimal limits fixed by the “Sale of Milk Regulations, 1901.” Of this number 8 were deficient in non-fatty solids, 10 in milk fat, and 1 in both. The percentage of deficiency in fat varied from 3.3 to 16.6 (the average being 6.73), and of solids not fat from 0.5 to 9.1 (average, 3.78.)

“Appeal to Cow” Samples.—Only in one case was it found necessary to visit a farm for the purpose of obtaining samples direct from the cows. 4 samples of milk were taken, 3 of which proved to be genuine. The other was deficient in non-fatty solids.

Samples not Genuine, etc.—The percentage of all samples not genuine to the total number taken was 2·34 (compared with 3·67 for the previous year). This is the lowest percentage of adulteration on record. The percentage of non-genuine milk samples to the total number of milk samples obtained was only 2·18 (as against 2·80 in 1929). The total number of samples taken was at the rate of 4·08 per 1,000 of the population (estimated) of the City for the year 1930. This is in excess of the number suggested by the Ministry of Agriculture (viz., 3 per 1,000 of the population).

Margarine.—17 samples of margarine were purchased and analysed. All were genuine, free from preservatives, and in compliance with the requirements of the Act in all other respects.

Margarine Warehouses.—125 visits were made to the registered margarine warehouses in the City. The packages were examined as regards proper marking, and all found to comply with the Act.

Preservatives in Food.—Of the total samples obtained for analysis (1,155), only 33 contained preservative, the quantity being in most instances well within the limit allowed.

Six samples of sausage (informal and formal respectively, from three different vendors), contained sulphur dioxide in quantity within the maximal limit, but the presence of which was not declared as required. These offences were met by letters of caution.

Three samples of jam (two informal and one formal, from one vendor), contained sulphur dioxide in excess of the limit allowed, and both retailer and wholesalers were cautioned.

One informal sample of beer contained an excess of sulphur dioxide, and the subsequent formal sample from the same vendor being within the permissible limit of that preservative, this case was also met by a caution.

OFFENCES OTHER THAN ADULTERATION.

OFFENCE.	No OF CASES.	ACTION TAKEN, ETC.
<i>Public Health (Preservatives, &c., in Food) Regulations, 1925-1927 :—</i> Selling sausage containing sulphur dioxide (in quantity within the permissible limit), the presence of which was not declared as required.	6	1 sample obtained informally and 1 formally from each of 3 different vendors respectively. Offender cautioned in each case.
<i>Milk and Dairies (Amendment) Act, 1922, Section 2, and Milk & Dairies Order, 1926, Section 6 :—</i> Selling milk without being registered for the purpose.	2	Offenders cautioned.
<i>Milk and Dairies Order, 1926, Section 14 :—</i> Milk sold under unsuitable conditions.	1	Offender cautioned.
<i>Sections 27-29 :—</i> Milk churns in a condition contravening the Order.	24	Offenders cautioned.
Milk churns not properly cleansed before being returned.	25	Do.
<i>Section 31 (2) :—</i> Milk bottles filled from hand-can on public street.	1	Offender cautioned.
<i>Section 33 :—</i> Milk vehicles in a dirty condition.	2	Offenders cautioned.
<i>Sections 14 (1) & 26 (1) & (2) :—</i> Dairy premises not kept properly clean, floor defective, etc.	1	Offender cautioned.
<i>Milk & Dairies (Amendment) Act, 1922, Section 3 :—</i> Advertising for sale "Grade A" milk without being licensed for the purpose.	1	Do.
Carried forward ...	63	

OFFENCES OTHER THAN ADULTERATION—*continued.*

OFFENCE.	NO OF CASES.	ACTION TAKEN, ETC.
Brought forward ..	63	
<i>Milk and Dairies (Amendment) Act, 1922, Section 3, and the Milk (Special Designations) Order, 1923, Schedule 3, Part III., B. (2) :—</i> Using milk bottle discs marked "Grade A" in sale of ordinary milk.	1	Offender cautioned.
<i>Milk (Special Designations) Order, 1923, Third Schedule, Part III. (7) :—</i> Caps on milk bottles not marked with "day of production," etc.	1	Do.
<i>Milk and Dairies (Consolidation) Act, 1915, Section 6 :—</i> Selling milk from cans and/or vehicles not inscribed with the name and address of the vendor.	3	Offenders cautioned.
TOTAL	68	

The Public Health (Condensed Milk) Regulations, 1923-1927, and the Public Health (Dried Milk) Regulations, 1923-1927.

Six samples of condensed milk and four of dried milk were obtained. All were genuine, and in compliance with the Regulations with regard to composition and labelling.

BACTERIAL IMPURITY OF MILK AND WATER.

Milk.—377 samples were examined by the Bacteriologist for the presence of tubercle bacilli, which were found in 16, or 4·2 per cent : a considerable reduction on last year's figures, which were 33 and 8·7 per cent. respectively.

Action taken is described on page 221.

296 samples were examined for evidence of excremental pollution, which was found to an undesirable degree in 94, or 31.7 per cent. In every case the Medical Officer of Health of the district from which the milk originated was informed, with the result that steps were taken to secure more cleanly methods of production.

Cleanliness of Milk Churns.—During the year 23,064 churns awaiting return to the farmers were examined at the various railway stations in the City. Of this number, 33 (as compared with 13 in 1929) were found in an uncleansed condition. The offender in each case was cautioned by the Medical Officer of Health.

In addition, 3,629 churns in course of transit through the City were examined, and 15 (as compared with 19 last year) were found in a dirty condition. These matters were reported to the Medical Officers of Health of the Districts concerned.

24 farmer-consignors were also communicated with respecting churns found to be defective or not in conformity with the requirements of the Milk and Dairies Order.

Water.—Samples were collected from all parts of the City and at the water works, and examined for the presence of *bacillus coli*.

The results are described on page 144.

PREMISES ON WHICH FOOD IS PREPARED.

Bakehouses.—There are in the City 268 bakehouses, of which 46 are factories (*i.e.*, places in which mechanical power is used), and 222 are workshops.

The number of “ domestic ” bakehouses, or private dwelling houses in which the occupier makes bread for sale amongst the neighbours, is 81, a decrease of 17 since 1929. Domestic bake-houses are under the same supervision as when the business is carried on in an ordinary bakehouse, and, generally speaking, are kept in a cleanly state. It is seldom that any contraventions are found.

Restaurant Kitchens (which include hotels, cafés, and dining rooms). The number on the Register is now 123—an increase of six since last report. They are regularly inspected, and in only two cases was it found necessary to serve a notice ; otherwise, the few minor contraventions found were dealt with at the Inspector’s visit.

Fried Fish Shops.—The number of these is 158 (as against 156 in the previous year). For comments see “ Offensive Trades ” (Section VII.).

Ice Cream Manufactories and Retail Shops.—41 applications were received during the year for permission to make and/or sell this commodity. 16 were refused, the general sanitary conditions of the premises not being up to the standard.

The number of makers of ice cream remains 117, as in 1929, whilst the number of retailers only has decreased from 178 to 171.

The premises of both manufacturers and retailers are regularly inspected. In the case of manufacturers, they are advised that the persons actually engaged in making the ice cream be supplied with white washable overalls, which is done in many cases. Unfortunately, however, under the existing law, this cannot be insisted upon.

In seven instances it was found that ice-cream was being sold from barrows which were not properly inscribed with the owners' name and address, as required by Section 52 (4) of the Newcastle Corporation Act, 1911. A caution in each case resulted in compliance with the Act.

The Milk and Dairies (Amendment) Act, 1922, Sec. 2; and The Milk and Dairies Order, 1926, Sec. 6.—During the year 21 applications were received for permission to retail milk, 12 being granted and 9 refused on sanitary grounds. At the close of the year there were 693 retail milk-shops in the City, including 64 belonging to 10 large dairy companies. Of the total, 70 were shops in which only dairy products and like commodities were retailed, 258 were shops selling other articles, and 40 were hawkers. The last-named type of milk dealer is not now registered. During the year 8 applications for registration were received from intending hawkers, but all were refused. It is ultimately intended to remove those at present on the Register, as they are a continual source of trouble to the Department, and certainly no credit to the trade. Much might be done by the wholesale dairymen by refusing to sell milk to them and ceasing to lend or store their milk cans. The remaining 325 shops sold a sterilised milk in stoppered bottles supplied by two firms.

C. RAIMES,

*Inspector under the Sale of
Food and Drugs Acts, etc.*

*Health Department,
Town Hall,*

24th June, 1931.

Samples taken for Analysis during the Year 1930.

ARTICLE	No. of Samples obtained.			Result of Analysis.			Action taken.			REMARKS.
	Formal.	Informal.	Total.	Genuine.	Not Genuine.	Doubtful.	Prosecu- tions.	Convic- tions.	Cases Dismissed.	
New Milk	873	..	873	854	19	..	3	1	2	In 1 case (1 of a series of 4 " appeal to cow " samples —the others being genuine) no proceedings were taken, and in the remaining 15 (of the 19 samples " not genuine ") the vendors were cautioned by order of the Health Committee. The sample " not genuine " was 1·7 per cent. deficient in non-fatty solids, respecting which the vendor was cautioned.
Skimmed Milk	3	..	3	2	1	..	..	..	..
Condensed Milk	6	6	6	..	..	..	..	..
Dried Milk	4	4	4	..	..	..	..	..
Cream	8	8	8	The sample " not genuine " (obtained " informally ") contained 1·45 per cent. excess water. A subsequent sample (taken " formally ") being genuine, no further action was taken.
Butter	2	17	19	18	1	..	..	..	..
Margarine	17	17	17	..	..	..	..	..
Coffee (including " Coffee and Chicory Extract ")	..	4	4	4	..	..	..	..	..
Cocoa	3	3	3	The 3 samples " not genuine " contained excess pre-servative (sulphur dioxide), 2 being informal samples. Formal samples were obtained, and in one case the amount of preservative just reached the limit allowed. In the other that quantity was exceeded, and both the retailer and the wholesalers were cautioned.
Tea	12	12	12	..	..	..	..	..
Sugar	2	2	2	..	..	..	..	..
Baking Powder	6	6	6	..	..	..	..	..
Custard Powder	4	4	4	1 sample of tomatoes contained tin compounds equi-valent to 80 parts of metallic tin per million (0·56 grain per lb.). Although not considered dangerous to life, under ordinary circumstances, the attention of the vendor was drawn to the matter by the Medical Officer of Health.
Flour (including self-raising flour, &c.)	..	7	7	7	..	..	..	..	..
Wholemeal and Oatmeal	2	2	2	..	..	..	..	..
Yeast	9	9	9	..	..	..	..	..
Barley	1	1	1	The 2 samples " not genuine " (obtained informally and formally, from one vendor), contained excess water 6·9 per cent., and 8·7 per cent. respectively. Vendor cautioned.
Rice	3	3	3	..	..	..	..	..
Ground Rice, Semolina, Sago, Tapioca and Arrowroot	..	9	9	9	..	..	..	..	..
Corn Flour	2	2	2	..	..	..	..	..
Pepper	2	2	2	The sample " not genuine " (obtained informally) con-tained excess preservative (sulphur dioxide). In the subsequent formal sample the quantity of preserva-tive was within the limit allowed, and the case was met by a caution.
Mustard	2	2	2	..	..	..	..	..
Vinegar	2	2	4	4	..	..	..	..	..
Sauce	2	2	2	..	..	..	..	..
Ground Ginger	1	1	1	The 3 samples " not genuine " contained excess pre-servative (sulphur dioxide), 2 being informal samples. Formal samples were obtained, and in one case the amount of preservative just reached the limit allowed. In the other that quantity was exceeded, and both the retailer and the wholesalers were cautioned.
Mixed Spice	1	1	1	..	..	..	..	..
Lard	14	14	14	..	..	..	..	..
Bacon	1	1	1	..	..	..	..	..
Cheese	13	13	13	The 2 samples " not genuine " (obtained informally and formally, from one vendor), contained excess water 6·9 per cent., and 8·7 per cent. respectively. Vendor cautioned.
Suet	1	1	1	..	..	..	..	..
Sausage, Tripe, Black Pudding and Polony	13	21	34	34	..	..	..	..	..
Meat Pastes	3	3	3	..	..	..	..	..
Peas	2	2	2	..	3	1 sample of tomatoes contained tin compounds equi-valent to 80 parts of metallic tin per million (0·56 grain per lb.). Although not considered dangerous to life, under ordinary circumstances, the attention of the vendor was drawn to the matter by the Medical Officer of Health.
Jams	2	3	5	2	3	..	..	..	..
Honey	3	3	3	..	..	..	..	..
Salmon (tinned)	1	1	1	..	..	..	..	..
Lemonade Powder	1	1	1	The 2 samples " not genuine " (obtained informally and formally, from one vendor), contained excess water 6·9 per cent., and 8·7 per cent. respectively. Vendor cautioned.
Sponge Cake	1	1	1	..	..	..	..	..
Dried Fruits (Raisins, Currants, Sultanas and Figs)	12	12	12	..	..	..	..	..
Candied Peel	3	3	3	..	..	..	..	..
Canned Fruit (including Tomatoes)	2	2	2	The sample " not genuine " (obtained informally) con-tained excess preservative (sulphur dioxide). In the subsequent formal sample the quantity of preserva-tive was within the limit allowed, and the case was met by a caution.
Table Jelly and Gelatine	10	10	10	..	..	..	..	..
Household Drugs	27	27	27	..	..	..	..	..
(Tincture of Rhubarb, Syrup of Rhubarb, Paregoric, Syrup of Figs, Camphorated Oil, Gregory Powder, Tartaric Acid, Cream of Tartar, Olive Oil, Glycerine, Castor Oil, Glauber Salts, Cod Liver Oil, and White Precipitate Ointment)	..	4	4	4	..	..	..	..	..
Whiskey	4	4	4	The sample " not genuine " (obtained informally) con-tained excess preservative (sulphur dioxide). In the subsequent formal sample the quantity of preserva-tive was within the limit allowed, and the case was met by a caution.
Rum	1	3	4	2	2	..	..	..	..
Beer	1	3	4	3	1	..	..	..	..
Wines (Alcoholic)	4	4	4	..	..	..	..	..
TOTALS	897	258	1155	1128	27	..	3	1	2	Amount of Penalties obtained £1 0s. 0d.

† Includes 177 samples taken " in course of delivery " (at railway stations, hospitals, etc.).

REPORT OF THE
CHIEF SANITARY INSPECTOR.

VII.—THE HOME AND THE
WORKSHOP.

NUISANCES, HOUSING, FACTORIES AND
WORKSHOPS, Etc.

NUISANCES, HOUSING, FACTORIES AND WORKSHOPS, ETC.

The following is the Report of the Chief Sanitary Inspector.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I have pleasure in submitting the following report on the work carried out in my Section of the Department during the year ended December 31st, 1930.

NUISANCES.

The number of nuisances reported upon and dealt with during the year was 14,318. This is an increase of 2,222 on last year's report. As usual, they were of a most varied nature. A large proportion of them need never have arisen, if the tenants had realised the obligation to keep the sanitary conveniences, drains and traps, clean and free from obstruction. Others were of such a trifling nature as to be easily abated by the occupiers themselves, if they would take the trouble to do so.

Overcrowding.

Overcrowding shows no sign of abatement, and as evidence of the great demand for houses, there are over 9,000 applications for houses at present in the hands of the City Treasurer. A great number of these are from people already living under reasonable conditions, but nevertheless there is a considerable proportion of the applicants most unhappily situated and grossly overcrowded. Scarcely a day passes without some householder calling at the Health Office to enlist the aid

of the Inspector in the endeavour to get better accommodation. Cases are common where a mixed family of from four to eight persons is housed in a one-room holding. Apart altogether from the moral aspect of such conditions, the occupiers cannot enjoy the same measure of health and happiness as those living under more favourable circumstances. Every effort is made to help in such cases. To serve a notice to abate the overcrowding is futile, for the person upon whom it is served cannot possibly comply with it. The high rents charged for de-controlled houses when empty are also an important factor in overcrowding. A man out of employment and only receiving state assistance, cannot possibly pay from 15s. to 22s. per week for a flat, the pre-war rent of which was from 6s. to 7s. 6d. per week.

Notices Served.

The following are the numbers of notices and letters issued during the year :—

Number of notices served :—

Informal	6,091	
Statutory	876	
	—	6,967
Number of special letters sent		2,604
Number of circular letters sent		2,103
		—
Total		11,674
		—

Magisterial Proceedings.

Considering the total number of letters sent out and notices served (11,674), it is worthy of note that it was only necessary to take legal proceedings in 64 cases. In the remaining instances in which proceedings were ordered by the Health Committee, the necessary work was carried out without the issue of summonses. For details see page 265.

The Rent and Mortgage Interest (Restrictions) Acts.

No applications were received this year from tenants for certificates under these Acts. It is remarkable that greater advantage is not taken of this provision, for certainly a house let at from 15s. to 22s. per week should be kept in a reasonable state of repair.

Conversion of Dry Closets to Water Closets.

This important work still goes on, although there is a slight decrease in the number of pailclosets converted to water closets. This is accounted for by the fact that practically all are converted in the older class of property, and the closets remaining are of such a good type and kept in such condition as to make proof of "insufficiency" difficult in the Police Court.

The number converted in 1930 was 364 (against 392 in 1929), and of this number 316 were pail closets, 32 "cell" privies, 16 privies (in combination with 7 ash-pits). 314 "dry" ashpits were also removed and replaced by portable dustbins. This latter is the largest number removed in one year in the history of the Department, several districts being now practically entirely on the dustbin system. In connection with these conversions, 869 dustbins were supplied by the Corporation, and delivered at the houses free of cost.

As in previous years, a circular letter, giving an abstract of Sec. 21 Public Health Acts (Amendment) Act, 1890, which provides that any person improperly fouling or damaging any water closet shall be liable to a penalty of 10/-, is given to each tenant. This has proved of great value.

RETURN OF " DRY " CLOSETS IN THE VARIOUS WARDS OF THE CITY.

WARDS.	Total No. Privies.	Pail Closets.	Cell Privies.	Privies and Ashpits.	
				Privies.	Ashpits.
St. Nicholas' .....	..	..	..	..	..
St. Thomas'	5	5	..	..	..
St. John's .....	..	..	..	..	..
Stephenson .....	..	..	..	..	..
Armstrong .....	..	..	..	..	..
Elswick	16	16	..	..	..
Westgate	2	2	..	..	..
Arthur's Hill .....	..	..	..	..	..
Benwell .....	..	..	..	..	..
Fenham	16	11	3	2	1
All Saints'	2	2	..	..	..
St. Andrew's .....	..	..	..	..	..
Jesmond .....	..	..	..	..	..
Dene .....	..	..	..	..	..
Heaton .....	..	..	..	..	..
Byker	266	266	..	..	..
St. Lawrence	316	314	..	2	2
St. Anthony's	46	46	..	..	..
Walker	29	4	2	23	13
Total in City	698	666	5	27	16

Smoke Abatement.

As will be seen from the appended table, observations have been made of factory and other chimneys in the city, and although it was not found necessary to issue any statutory notices, informal notices were served in 49 cases, and these resulted in a great decrease both in the quantity and density of the smoke emitted.

A class has been commenced at the Rutherford Technical College for stokers and others engaged in the management of steam-raising plant. It is hoped that this will have good results, for there is no doubt that much depends upon the stoker in the elimination of smoke.

Byelaws with regard to smoke are receiving the attention of the Local Authority, and when in force, will do much to prevent the pollution of the atmosphere.

The following table gives details as to smoke inspection :—

No. of chimneys watched.	No. of observations made.	No. of chimneys from which black smoke issued in such quantity as to be a nuisance.	No. of times when smoke issued so as to be a nuisance.	No. of notices served for the abatement of smoke nuisances.		No. of Prosecutions.
				Informal.	Statutory	
102	557	11	15	49*	..	..

* Includes communications sent in respect of excessive “medium” smoke.

Atmospheric Pollution Records.—Three observation stations, under the immediate control of the City Analyst, are placed—one in Westgate Cemetery, one in the grounds of the Moor Hospital, and one in St. Lawrence area, in connection with similar stations in other towns, the monthly results from all of which are compared and published by the Department of Scientific and Industrial Research.

The monthly readings from the Newcastle stations are appended :—

ATMOSPHERIC POLLUTION.—NEWCASTLE RECORDS, 1930.

TOWN MOOR.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car-bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O ₃ .	Chlorine as Cl.	Ammonia as N.H ₃ .	Sulphate as S.O ₄ .
January .	85.2	0.01	1.11	1.68	0.85	3.07	6.72	0.97	0.61	0.09	1.16
February	62.5	0.13	0.52	1.62	1.75	3.62	7.64	1.42	0.94	0.06	1.70
March . . .	71.0	0.10	1.02	1.99	1.99	3.98	9.08	1.80	0.51	0.06	2.16
April	42.6	0.04	0.74	1.51	1.45	2.81	6.55	0.99	0.78	0.03	1.19
May	42.6	0.13	1.51	1.73	1.28	1.88	6.53	0.88	0.24	0.04	1.05
June	32.7	0.08	1.35	2.29	1.38	1.56	6.66	0.89	0.16	0.04	1.08
July	154.8	0.01	0.91	1.24	2.16	0.62	4.94	0.85	0.55	0.03	1.02
August . .	184.6	0.03	2.10	1.49	5.54	3.32	12.48	2.27	0.78	0.18	2.73
Sept.	99.4	0.03	0.70	1.13	2.19	4.57	8.62	1.50	0.99	0.20	1.80
Oct.	59.6	0.13	1.19	1.12	1.56	1.90	5.90	1.22	0.21	0.04	1.46
Nov.	107.9	0.07	0.78	1.62	1.95	4.53	8.95	1.41	0.45	0.13	1.69
Dec.	88.0	0.09	0.89	2.32	1.93	4.23	9.46	1.87	0.50	0.17	2.24
Total, 12 months .	1030.9	0.85	12.82	19.74	24.03	36.09	93.53	16.07	6.72	1.07	19.28
Average per month	85.9	0.07	1.07	1.64	2.00	3.01	7.79	1.34	0.56	0.09	1.61

An average of 7.79 metric tons per square kilometre per month = 7.5 cwts. per acre per annum, or 239 tons per square mile per annum, as compared with 7.9 cwts. per acre, or 254 tons per square mile in 1929.

WESTGATE CEMETERY.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O ₃ .	Chlorine as Cl.	Ammonia as N.H ₃ .	Sulphate as S.O ₄ .
January .	97.3	0.21	4.50	7.66	2.14	7.20	21.71	3.27	0.63	0.15	3.92
February	52.8	0.07	1.56	2.18	2.94	3.81	10.56	2.14	0.78	0.06	2.57
March ...	58.4	0.05	3.99	5.34	3.96	5.73	19.07	3.41	0.54	0.04	4.09
April	47.3	0.08	3.99	4.78	3.78	5.67	18.30	3.21	0.90	0.04	3.85
May	39.4	0.20	2.23	3.05	1.26	1.57	8.31	0.81	0.34	0.07	0.98
June ...	27.1	0.19	1.60	4.15	0.27	2.17	8.38	0.52	0.15	0.01	0.62
July	114.0	0.03	1.85	2.46	0.92	1.82	7.08	0.71	0.49	0.03	0.84
August ..	142.5	0.05	3.38	3.23	2.57	1.71	10.94	1.37	0.50	0.15	1.64
Sept.	74.6	0.03	1.70	2.79	0.90	3.13	8.55	0.87	0.37	0.11	1.05
Oct.	46.1	0.14	1.90	1.94	0.92	1.39	6.29	0.73	0.19	0.04	0.88
Nov.	78.7	0.05	2.37	2.78	1.26	2.36	8.82	0.98	0.39	0.09	1.17
Dec.	67.9	0.07	3.58	3.23	0.95	2.71	10.54	1.33	0.49	0.18	1.60
Total, 12 months .	846.1	1.17	32.65	43.59	21.87	39.27	138.55	19.35	5.77	0.97	23.21
Average per month	70.5	0.10	2.72	3.63	1.82	3.27	11.54	1.61	0.48	0.08	1.93

An average of 11.54 metric tons per square kilometre per month = 11.1 cwts. per acre per annum, or 354 tons per square mile per annum, as compared with 14.6 cwts. per acre, or 468 tons per square mile in 1929.

ST. LAWRENCE.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O ₃ .	Chlorine as Cl.	Ammonia as N.H ₃ .	Sulphate as S.O ₄ .
January .	70.3	0.01	2.22	9.18	1.54	4.50	17.45	1.73	0.85	0.10	2.08
February	39.0	0.81	3.95	9.27	1.72	3.25	19.00	1.50	0.78	0.05	1.80
March ...	52.1	0.14	1.69	3.75	1.25	4.06	10.89	1.29	0.62	0.05	1.55
April	48.2	0.16	1.87	3.70	3.27	3.56	12.56	1.33	1.16	0.04	1.59
May	36.5	0.23	2.36	5.23	1.54	2.91	12.27	1.20	0.42	0.08	1.43
June	15.6	0.05	1.98	3.42	1.18	1.18	7.81	0.66	0.25	0.03	0.79
July	104.2	0.04	1.60	3.70	1.88	2.48	9.70	1.20	0.66	0.05	1.43
August ..	164.0	0.04	2.60	3.18	2.29	3.28	11.39	1.81	0.94	0.17	2.17
Sept.	67.7	0.04	1.59	4.19	2.17	4.19	12.18	1.30	0.77	0.10	1.56
Oct.	43.0	0.10	1.48	2.54	0.93	1.98	7.03	0.89	0.25	0.03	1.07
Nov.	78.1	0.14	1.41	3.03	1.25	3.12	8.95	1.34	0.44	0.08	1.61
Dec.	66.4	0.21	1.88	4.29	1.33	3.98	11.69	1.91	0.47	0.10	2.29
Total 12 months .	785.1	1.97	24.63	55.48	20.35	38.49	140.92	16.16	7.61	0.88	19.37
Average per month	65.4	0.16	2.05	4.62	1.70	3.21	11.74	1.35	0.63	0.07	1.61

An average of 11.74 metric tons per square kilometre per month = 11.3 cwts. per acre per annum, or 360 tons per square mile per annum, as compared with 10.6 cwts. per acre, or 340 tons per square mile in 1929.

TOTAL IN THREE GAUGES IN THE CITY.

MONTH.	RAIN (Millimetres).	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.									
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.			
		Tar.	Other Car- bonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as S.O ₃ .	Chlorine as Cl.	Ammonia as N.H ₃ .	Sulphate as S.O ₄ .
Total, 12 months .	2662.1	3.99	70.10	118.81	66.25	113.85	373.00	51.58	20.10	2.92	61.86
Average per month	221.8	0.33	5.84	9.90	5.52	9.49	31.10	4.30	1.76	0.24	5.16
Average per gauge 12 months	887.4	1.33	23.37	39.60	22.08	37.95	124.33	17.19	6.70	0.97	20.62
Average per gauge per month	73.9	0.11	1.95	3.30	1.84	3.16	10.36	1.43	0.56	0.08	1.72

An average of 10.36 metric tons per square kilometre per month = 9.9 cwts. per acre per annum, or 318 tons per square mile per annum, as compared with 11 cwts. per acre, or 354 tons per square mile in 1929.

For comparison with the foregoing, the following returns of sunshine recorded at the Armstrong College, Newcastle, and at Cockle Park, near Morpeth (about 15 miles from the City), are given :—

Month.	Armstrong College. Sunshine (hours).	Cockle Park. Sunshine (hours).
January	46·0	68·8
February	25·7	51·7
March	73·4	102·5
April	50·7	85·7
May	126·2	150·6
June	189·9	205·9
July	129·4	148·7
August	162·7	162·4
September	75·7	86·2
October	101·6	117·4
November	82·7	93·5
December	11·8	49·6
Total for year	1075·8	1323·0
Average per month	89·6	110·2

CINEMAS, THEATRES, AND OTHER PLACES OF PUBLIC ENTERTAINMENT.

Five applications for certificates of sanitation, which are required by the Licensing Justices before a licence is granted or renewed, were considered. Of these four were granted and one refused.

The number of places so certified now totals six theatres and music halls, 30 cinemas, and 98 other places such as dance and concert halls, billiard rooms, cafés, etc.

141 visits were made during both the day and evening, to inspect the sanitary arrangements, and dressing rooms. Little or no cause of complaint was found.

The testing of the air and ventilation systems has again been systematically carried out. Every cinema, music hall and theatre was tested with the “Kata”

apparatus. In some cases as many as five separate tests were made in various parts of the halls. The total number was 82, carried out in 36 different premises. The tests revealed only a slight improvement upon those made in 1929, for in that year 27 fulfilled the conditions for first class halls. This year only one can be added to that category, giving a total of 28 first class and 8 second class. The results, however, compare favourably with the records of other towns which carry out this work.

In addition to the cinemas, etc., six tests were made in three classrooms at the Rutherford College, and in each case the results were satisfactory.

OFFENSIVE TRADES.

Fried Fish Shops still predominate in the registered offensive trades, as they do in all large towns. At present there are 158, an increase of 2 over 1929. This gives one such business to every 1,794 head of population in the city. They were regularly visited, both by day and night. In three cases it was necessary to serve notices to cleanse the premises, and in eight, to carry out other minor alterations or improvements. All were duly complied with, without any necessity for further action.

With these exceptions the businesses in question were conducted in a very satisfactory manner.

Other Trades.—The total number of offensive trades now carried on in the City is 196.

This represents a decrease of 1 rag and bone dealer, and an increase of 2 fish fryers, the other trades remaining as previously.

The number now on the register is :—

Rag and Bone Dealers.....	14
Dealers in Hides and Skins.....	4
Dealers in Blood or other putrescible animal products	1
Fat Melters or Extractors.....	3
Glue and Size Makers.....	2
Gut Scrapers	1
Fish Fryers	158
Bone Boilers	5
Soap Boilers	1
Tripe Boilers	7

SUMMARY OF NUISANCES, ETC., FOR THE ABATEMENT OF WHICH NOTICES
WERE SERVED DURING 1930.

Defective "cell" privies in Walker and Benwell (to replace with water-closets).....	14
Foul pail-closets (to replace with water-closets).....	278
Foul privies and ashpits (to replace with water closets)	9
Defective waste water-closets (to replace with fresh water-closets with flushing cisterns, etc.)	17
Foul or defective ashpits not connected with privies (to remove and provide dust bins)	309
Insufficient water-closet or privy accommodation (additional water-closets ordered)	8
Defective or insufficient dust bins (for houses)	1,933
" " (for business premises).....	110
Defective water-closets	967
Water-closets without water supply	89
Choked water-closets (mostly served on tenants).....	34
Dirty water-closets (all served on tenants)	51
Defective drains (to repair, or construct new drains).....	219
Insufficient means of drainage.....	7
Choked drains, etc.	488
Defective, want of, or choked sinks, waste pipes, etc.....	260
Defective or choked soil-pipes, vent shafts, etc.....	48
Sink waste-pipes not trapped	12
Want of or defective pavement in yards, passages, etc.....	394
Dirty rooms	47
Dirty bedding	3
Damp rooms	172
Overcrowding	6
Dirty yards, passages, stairs, etc.	157
Animals, pigeons, and fowls improperly kept	41
Offensive accumulations	120
Accumulations of manure	24
Want of or defective manure pits	10
Broken roofs and want of or defective or choked spouting	1,587
Want of water (other than in tenements—see below).....	117
Smoke nuisances	11
Want of proper ventilation to rooms (including to floor space), broken window cords, etc.....	633
Rooms inadequately lighted	1
Structural defects—internal and external—(broken plaster, floors, stairs, walls, fireplaces, etc.).....	2,943
Cisterns supplying water to sinks, etc., dirty or defective.....	1
Filth thrown on yards, streets, into dustbins, etc.....	8
Stables (unsuitable, defective, dirty, etc.).....	13
Food manufactured or stored for sale under improper conditions.....	19
Bakehouses—Dirty, etc.	93
Milk Shops (or Dairies)—	
Want of Cleansing	1
Other Defects, etc.	3
Ice Creameries—	
Want of Cleansing, etc.	7
No name and address on barrows.....	7
Council (and other) Schools—Water closets defective.....	3
Foul ashpits	1
Cellar dwellings illegally occupied.....	5
Fried fish shops—(Want of cleansing)	3
,, (Other defects and contraventions).....	8
Tenements—Limewashing not done	47
No adequate accommodation for washing of clothes.....	288
,, ,, storage of food.....	1,813
,, ,, preparation and cooking of food	237
Water supply and sinks not adequate, conveniently accessible, etc.	552

SUMMARY OF NUISANCES, ETC.—*Continued*

Tenements—continued.		
Water supply (only) not adequate, conveniently accessible, etc.	97	
Insufficient number of water-closets provided	85	
Inadequate lighting of common staircases—Natural	75	542
Artificial	367	
Staircases without proper handrails, etc.	187	
Houses converted to “tenements” without the Byelaws being complied with	4	
Cinemas—Temperature excessive	2	
Dustbins defective	1	
Unclassified minor nuisances	171	
TOTAL		14,318

DETAILS RELATING TO CERTAIN WORKS CARRIED OUT IN THE ABATEMENT OF NUISANCES AND TO INSPECTIONS MADE DURING 1930.

Length (in yards) of old drains removed	967
Length (in yards) of new drains constructed	2,777
New trapped gullies provided to drains	372
“ Cell ” privies removed (in Walker and Benwell).....	32
Pail-closets removed	316
Combined privies and ashpits—Privies	16
Ashpits	7
Defective water-closets removed	87
Water-closets provided (in place of the foregoing privies and defective water-closets removed, also in 63 cases where the accommodation was previously insufficient)	534
Dry ash-pits removed and replaced by galvanised iron dust bins....	314
Dust bins substituted for dry ash-pits where water-closets existed, and provided in cases where privies have been replaced by water-closets	‡869
No. of drains tested.....	868
No. of tests of above drains made by smoke and water.....	916
No. of inspections from complaints made at office (verbally or by letter).....	3,402
No. of tenement inspections made	17,256
No. of contraventions of Tenement Bye-laws for which notices have been served to obtain remedy	6,447
Inspections of houses made from complaints received outdoors or nuisances discovered in the districts, including a large number of minor nuisances, such as choked drains and dirty yards, the abatement of which was accomplished at the time of visit, and without legal notice	5,574
Inspections to learn if works ordered were in progress.....	18,743
Supervisions of work in progress	9,425
Common yards and courts in the worst localities specially visited on Friday afternoons and Saturday mornings to obtain weekly cleansing	25,521
Inspections after infectious disease.....	928
Inspections of milk shops and ice creameries (including retail shops)	1,623
„ bakehouses	†1,777
„ offensive trades	1,641
„ wholesale margarine warehouses	125
„ as to limewashing of tenements	2,588
„ of schools	129
„ under Housing Act	2,245
Inspection of cinemas, etc. (day visits, 97 ; night visits, 44)	141
Tents, vans, sheds and similar structures	866
Miscellaneous visits	7,533

‡ Dust bins supplied free by Corporation.

† Including 1,070 inspections made under the Factory and Workshop Acts by the Assistant Inspectors of Workshops.

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1930.

NATURE OF COMPLAINT.	No of Cases.	Work done and Nuisances abated without the Summonses being applied for.	Summonses issued.	
			Work done and Summonses withdrawn.	Other Results.
<i>Public Health Acts :—</i>				
Roofs and spouting defective	22	14	7	In one instance work ordered by Magistrates to be done in 14 days.
Dampness in rooms	2	2	..	
Sinks defective, waste-pipes untrapped, etc. .	2	..	2	
Smoke emitted into rooms from fireplaces, etc.	2	2	..	
Rooms not adequately ventilated (window sash-cords broken) ...	2	..	2	
Yard pavement defective	2	..	2	
Drains obstructed	1	1	..	
Stable manure not regularly removed	1	1	..	
Cesspool overflow defective and insufficient ..	1	1	..	
<i>Public Health Act, 1875, Sec. 36, and Newcastle upon Tyne Improvement Act, 1892, Sec. 53 :—</i>				
Foul privies (to be replaced by waterclosets)	91	91	..	
Foul ashpits (to be replaced by portable dustbins).....	7	6	1	
Waterclosets defective ..	2	1	1	
<i>Public Health Acts Amendment Act, 1890, Sec. 22 :—</i>				
W.C. accommodation insufficient, or not separate for sexes	2	2	..	
<i>Public Health Act, 1925, Sec. 72 :—</i>				
Room used for storage and sale of foodstuffs occupied also as a sleeping apartment ..	1	..	..	Fined £1.
Carried forward .	138	121	15	2

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1930.—*continued.*

NATURE OF COMPLAINT.	No. of Cases.	Work done and Nuisances abated without the Summonses being applied for.	Summonses Issued.	
			Work done and Summonses withdrawn.	Other Results.
Brought forward	138	121	15	2
<i>Public Health Act, 1875, Sec. 91, and Public Health (Smoke Abatement) Act, 1926, Sec. 1 :—</i>				
Emission of smoke and grit from laundry chimney	1	1	..	
<i>Newcastle upon Tyne Corporation Act, 1911 :—</i>				
<i>Section 52 :—</i>				
Ice cream manufactured under improper conditions	1	..	1	Premises vacated.
Dealer's name and address not inscribed on barrow and "freezer" dirty	1	1	..	
<i>Section 55 :—</i>				
Want of or defective dustbins for house refuse	22	16	5	In one instance fined 5/—.
<i>Newcastle upon Tyne Corporation Act, 1926, Section 15 :—</i>				
House without a proper and sufficient supply of water.....	1	..	1	
<i>Section 33 :—</i>				
Living vans kept on land without the approval of the Corporation ...	21	..	5	Occupiers fined 2/6 (11 cases). Five cases standing adjourned. (Lessees of ground also fined 10/— in two cases.)
<i>Byelaws with respect to Tenemented Houses :—</i>				
Watercloset accommodation insufficient (No. 8).	1	1	..	
W.C. structure, apparatus, etc., not maintained in good order (No. 11)	2	1	1	
Carried forward .	188	141	28	19

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1930.—*continued.*

NATURE OF COMPLAINT.	No. of Cases.	Work done and Nuisances abated without the Summonses being applied for.	Summonses Issued.	
			Work done and Summonses withdrawn.	Other Results.
Brought forward .	188	141	28	19
<i>Byelaws with respect to Tenemented Houses—continued :—</i>				
Common staircase not kept in proper repair (No. 18 <i>a</i>)	9	9	..	
Common staircases without adequate means of				
(<i>a</i>) Natural light (No. 18 <i>b</i>)	2	2	..	
(<i>b</i>) Artificial light (No. 18 <i>c</i>)	15	11	3	In one instance fined £2.
Staircase without sufficient handrails (No. 20)	3	3	..	
Fowls improperly kept (No. 24)	1	1	..	
Rooms inadequately ventilated (window sash-cords broken, etc.) (No. 26 <i>c</i>)	7	5	1	In one instance fined 5/-.
Limewashing of yards, passages, staircases, etc. (No. 28 <i>a</i>)	8	8	..	
Yard pavement not in proper repair (No. 28 <i>c</i>)	4	3	1	
Water supplies and sinks inadequate, not conveniently accessible, etc. (No. 28 <i>d</i>)	6	5	1	
Inadequate accommodation for—				
(<i>a</i>) Washing of clothes (No. 28, <i>fi.</i>)	9	5	4	
(<i>b</i>) Storage of food (No. 28 <i>f, ii.</i>)	13	10	3	
(<i>c</i>) Preparation and cooking of food (No. 28 <i>f, iii.</i>)	4	4	..	
Houses not throughout of adequate stability (structural defects, including floors, plaster, etc.) (No. 28 <i>g</i>)	4	2	1	In one instance fined 5/-.
Totals	273	209	42	22

Total amount of penalties—£6 2s. 6d.

HOUSING.

That the problem of finding houses is little less acute than in previous years is shown by the following return :—

CITY ENGINEER'S CENSUS OF UNOCCUPIED HOUSES.

Class of House.	Nov., 1912	Aug., 1914	Nov., 1918	Nov., 1922	Nov., 1925	Nov., 1926	Nov., 1927	Nov., 1928	Nov., 1929	Nov., 1930
Self-contained	306	137	29	93	105	179	215	222	205	182
Flats (each Flat counted as a separate dwelling).	903	75	..	35	15	41	55	34	52	21
House and Shop combined.....	68	29	2	9	6	27	18	28	20	42
Tenemented Houses	28	3	..	..	..	1	..	..	..	8
Total	1,305	244	31	137	126	248	288	284	277	253

Effect of Bad Housing.—Reference has already been made to the effect of bad housing and overcrowding upon the public health. It is of interest to summarise some of the points. Speaking generally, the wards with the highest populations per acre have also the highest death rates. The converse does not always hold, as some wards, such as Walker, may have small densely-packed areas scattered about among wide stretches of open space or farm land. The rates in these will be relatively high. But where the dwellings are evenly distributed and in good sanitary condition, and the population on area is low, the death rate is also low.

Thus the death rates from all causes are high in St. John's Ward (15·4), Elswick (14·9), Stephenson (14·7), and low in St. Thomas' (9·8), Fenham (9·9), Dene (10·0), which occupy respectively also opposite ends of the scale in regard to quality of housing and density of population (see tables on pages 45 and 52).

Similarly infantile mortality generally follows the same rule, and the wards with the highest wastage of child life are again among the most crowded ones. Thus Stephenson Ward has an infantile rate of 104 deaths per 1,000 births, St. Anthony's, 94, and St. John's and Armstrong 92, as compared with rates of 29 and 35 in Jesmond and Dene Wards respectively. Over a period of twenty-three years, the deaths per 1,000 births in one room, two room, and three room houses have been respectively 125, 114, and 95, and in the year under report were 94, 98, and 73.

In the case of tuberculosis one sees again the influence of congestion and bad houses in the fact that the highest mortalities for the year were in St. Nicholas' (2·59), St. Lawrence (2·27), St. Anthony's (1·80), while the lowest occurred in Jesmond (0·09), St. Thomas' (0·59), and Heaton (0·72). The tuberculosis death rate for the whole City in 1930 was 1·29 per 1,000 population. Again, about 34 per cent. of the population live in one and two room houses, yet over 38 per cent. of the deaths from consumption were among these.

The Housing Acts, 1925 and 1930.

During the year 2,245 inspections were made under these Acts. Difficulty is still experienced in obtaining compliance with notices. A great impetus would be given to this work if the Committee in some cases carried out the necessary repairs in default of the owner, as provided for by the Act. If housing conditions were normal, and closing orders could be made in some cases, it would no doubt have a most salutary effect in inducing owners to keep their houses in a reasonable state of repair.

The Housing Act, 1930, came into operation on 16th August, 1930.

It deals with the clearance or improvement of unhealthy areas, the repair and demolition of insanitary houses, the provision of State assistance towards the cost of re-housing operations, rural housing, and the provision of small houses for aged persons. This latter is a most important provision, and will go far to improve the conditions under which our aged poor live.

Local Authorities are given powers to make well ordered attacks on slum areas, and with that end in view the Act is divided into three broad categories.

1. Clearance Areas which are so bad as to be beyond redemption.
2. Improvement Areas, which are unhealthy by reason of insanitary conditions and overcrowding, narrow and badly arranged streets, or other defects which can be remedied without wholesale clearance.
3. Individual defective houses, which are in need of repair, or are so bad that they must be demolished.

As required by the Housing Act, 1930, a statement as to the measures which the Council propose to take during the next five years to deal with housing conditions in the City, and the provision of further housing accommodation, was prepared and forwarded to the Ministry of Health.

This provided for the following areas to be dealt with forthwith as clearance areas.

AREA.	Houses.	No. of Dwellings.	No. of Rooms.	Population.
Elswick East Terrace and Back George Street	106	210	462	884
St. Peters	139	219	413	883
Walker Sub-Areas Nos. 1 and 2	47	93	171	477
Walker Sub-Area No. 3	49	51	102	214
Lime and Ouse Streets	57	100	161	382
	398	673	1,309	2,840

In addition, the Council are to deal in the period of five years with the following areas, in the order in which they appear.

AREA.	Houses.	No. of Dwellings.	No. of Rooms.	Population.
Byker Bank	215	415	659	1,730
Scotswood Road	129	171	368	697
Spring Garden Lane	50	82	166	323
Manor Chare	36	100	145	364
West Central	65	147	251	612
City Road	79	199	290	761
Gallowgate	27	57	79	213
Buckingham Street	142	284	534	1,100
Friars	43	73	122	242
Westmorland Lane	22	37	80	150
Bedford Street	66	150	223	572
	874	1,715	2,917	6,764

It should be noted that the figures as to the number of houses and dwellings and the populations are necessarily approximate, and may be varied in defining the precise limits of the areas. This has since been done in the Lime and Ouse Streets Area, to which Cut Bank has been added.

Housing.

MINISTRY OF HEALTH TABLE.

YEARS ENDED 31ST DECEMBER, 1929 & 1930.

	1929	1930
Number of New Houses erected during the year :—		
(a) Total (including numbers given separately under (b)) :—		
(i.) By the Local Authority	841	223
(ii.) By other Local Authorities .....	..	..
(iii.) By other Bodies and Persons	348	355
(b) With State Assistance under the Housing Acts :—		
(i.) By the Local Authority—		
(a) For the purpose of Part II. of the Act of 1925	..	..
(b) For the purpose of Part III. of the Act of 1925	841	223
(c) For other purposes .....	..	..
(ii.) By other Bodies or Persons.....	56	12
1.— <i>Inspection of Dwelling-Houses during the Year :—</i>		
(1) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts).....	4344	4128
(2) Number of inspections made.....	9976	9521
(3) Number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	1624	1299
(4) Number of inspections made.....	2348	2245
(5) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation.....	35	78
(6) Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation.....	2646	2308
2.— <i>Remedy of Defects during the Year without Service of formal Notices :—</i>		
Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers	502	374
3.— <i>Action under Statutory Powers during the Year :—</i>		
A.—Proceedings under Section 3 of the Housing Act, 1925, and Section 17 of the Housing Act, 1930—		
(1) Number of dwelling-houses in respect of which notices were served requiring repairs.....	863	971
(2) Number of dwelling-houses which were rendered fit after service of formal notices :—		
(a) By owners	837	946
(b) By Local Authority in default of owners.....	..	..
(3) Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close.....	3	..
B.—Proceedings under Public Health Acts :—		
(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied.....	1281	963
(2) Number of dwelling-houses in which defects were remedied after service of formal notices :—		
(a) By owners	1248	935
(b) By Local Authority in default of owners.....	..	..

HOUSING—MINISTRY OF HEALTH TABLE—*Continued.*

	1929	1930
C.—Proceedings under Sections 11, 14 and 15 of the Housing Act, 1925 :—		
(1) Number of representations made with a view to the making of Closing Orders.....	..	..
(2) Number of dwelling-houses in respect of which Closing Orders were made .....	..	..
(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit .....	..	..
(4) Number of dwelling-houses in respect of which Demolition Orders were made.....	..	..
(5) Number of dwelling-houses demolished in pursuance of Demolition Orders .....	..	..
4.— <i>Number of Houses owned by the Local Authority, distinguishing those built in the last two years, and held under—</i>	Total.	Built 1929–1930.
(i.) Part III. of the Housing Act, 1925	3575	1064
(ii.) Part II. of the Housing Act, 1925, and	409	..
(iii.) Other Powers	2019	..

HOUSING CONDITIONS.

The following observations are made in compliance with the requirements of the Minister of Health :—

(1) GENERAL OBSERVATIONS.

The housing conditions are worst in the slum clearance areas, of which there are 15, with a population of approximately 10,000 persons. In these areas the types are tenements, small self-contained and houses in flats. As a rule the more insanitary conditions are found in the tenemented houses, of which there are approximately 3,508, containing 10,064 holdings, in the City. The most common defects are general dilapidations, dampness, insufficiency and inaccessibility of sanitary accommodation, water supply and sinks ; congestion of buildings ; and overcrowding.

(2) SUFFICIENCY OF SUPPLY OF HOUSES.

There are few houses available. A Census by the City Engineer in November shows that there were then

only 253 houses vacant, and of these 182 were self-contained. The Council has already completed several housing schemes. Up to the end of 1930 these had provided 5,565 houses, while 1,059 were in process of erection. Further schemes are under consideration. There is a waiting list of 9,356 applicants for Council houses, 3,013 of whom are living in tenements, sub-let rooms, or apartments, while 6,343 already have separate houses of two rooms or upwards. Of the latter, practically two-thirds have three rooms or more. There have been no important changes in the population of the City within the last few years. There is now little land in the City available for the erection of houses, and the price is high.

(3) OVERCROWDING.

Probably about 50 per cent. of the tenemented houses are overcrowded. This estimate is based on a systematic inspection of such houses. The overcrowding is largely due to the shortage of accommodation, to the inability to pay the high rents, and to unemployment. Another factor is early marriage. Owing to houses not being available, young married people frequently live with either of their parents, very often in already overcrowded rooms.

On account of the shortage of houses, no special action has been taken with regard to overcrowding.

(4) FITNESS OF HOUSES.

Little difficulty is experienced in dealing with nuisances under the Public Health Acts, but it does arise in connection with those sections of the Housing Acts which provide that if a notice under the Act is not complied with the Local Authority may do the work and recover the expenses of so doing. It is not the policy of this Authority, however, to take advantage

of these sections and to carry out repairs in default, with the result that defects which cannot be dealt with under the Public Health Acts, but which are inimical to the comfort of the occupiers, are not remedied.

No special measures have been taken to deal with particular types of insanitary houses, except in the case of tenemented property. The Tenement Byelaws contain clauses for repairs to this class of dwelling, and the houses are gradually being brought into conformity with these byelaws. In other types of houses repairs are secured under the provisions of the Public Health Acts.

Approximately seventy per cent. of the houses in the City have an internal water supply and sink. The water is supplied by the Newcastle and Gateshead Water Company. In many tenemented houses, however, the supply is still obtained from a common tap in the yard, but these are being dealt with systematically under the byelaws, and where practicable an internal supply provided, instead of, or in addition to, the water taps in the yards of the houses. There are a few isolated cases (not more than 20) where the water closet or other sanitary accommodation is beyond the curtilage of the dwelling, but at no great distance from it. In flats and self-contained houses this accommodation is private, but in tenements it is often shared by three or four families. The Tenement Byelaws, however, provide that there must be a water closet for every 12 persons occupying a house.

(5) UNHEALTHY AREAS.

The areas proposed to be dealt with as unhealthy are referred to previously. About 95 per cent. of the

houses in these areas are unhealthy. Complaints vary considerably. Dilapidations, choked drains and water closets, and overcrowding are amongst those most frequently received.

Action for remedy is taken under the Public Health Acts, or the Housing Acts. Four areas, comprising 398 houses, with a population of 2,840 persons, are at present being dealt with.

(6) **BYELAWS RELATING TO HOUSES, TO HOUSES LET IN LODGINGS, AND TO TENTS, VANS, SHEDS, ETC.**

There are no byelaws relating to houses, except those for houses let in lodgings or tenemented houses, and for tents, vans, etc. Particulars as to action taken will be found elsewhere in this Report.

Houses Demolished, etc.—Apart from action by the Health Committee, 14 tenemented houses (of 55 holdings), 8 flats, and 70 self-contained houses have been demolished, or have ceased to be used as dwellings, for various reasons (dilapidations, street improvements, conversion to business premises, etc.) These include 50 in Munition Cottages, which are being closed as the tenants remove, and 8 wooden houses in Ponteland Road.

Houses built during the Year 1930.—The City Engineer reports that there were 367 self-contained houses built privately during the year under report. In addition, 223 dwellings were provided under housing schemes.

Tents, Vans, Sheds and Similar Structures.

Of the 112 occupied living vans in the City in 1924, only five remained at the end of 1930, and one has since removed. These are located in Bunton's Yard and Jane Pit Yard, Walker. The occupiers have been frequently before the Magistrates, who, after listening to the accounts

of the defendants as to the difficulty of obtaining other accommodation, etc., admonish them and further adjourn the cases. At the time of writing, therefore, four vans are still left.

Three applications for permission to place or keep vans on land within the City, as required by Section 33 of the Newcastle Corporation Act, 1926, were received, and were in every case rejected.

Tenemented Houses.

The number of tenemented houses in the City is 3,508, containing 10,064 holdings, as follows :—

1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	5 Rooms.	Total.
3,154	5,725	1,078	106	1	10,064

During the year 17,256 inspections of tenemented holdings were made.

Tenement Byelaws.

In addition to the unhealthy areas, 537 houses, comprising 1,434 separate holdings, were inspected and reported upon in detail during the year. Although owners and agents are showing more willingness to comply with notices served under the byelaws, it was found necessary to report for legal proceedings in 88 (as against 198 in 1929) cases; 15 for non-compliance with the most difficult byelaw to work, viz., that requiring the provision of artificial light on common staircases. The total amount of fines only amounted to £2 10s. 0d., the greatest amount of work being carried out after the summonses were served, when they were withdrawn on payment of costs. In other instances the work was done on the owners being notified that legal proceedings were ordered. In some cases compliance with the byelaws

is utilised as an excuse for raising the rent, a practice which ought to be stopped, as it is the Local Authority, and not the tenants, who are responsible for the expenses incurred in complying with the byelaws.

New Buildings and Sanitary Alterations.—384 plans were examined by the Medical Officer of Health before their submission to the Town Improvement and Streets Committee and, where necessary, suggestions forwarded to the City Engineer for his consideration, as compared with 400 during the previous year.

Common Lodging Houses.

The number of houses in the City is 36, as compared with 37 in 1929. Two were voluntarily closed and removed from the register. One application was received for the registration of a new house and was granted. Registration was transferred to new keepers in two instances.

As will be seen from the summary, lodging houses for men only are greatly in the majority. There is need of a good house for women, for there is now only one of this class in the City.

The new byelaws have now been approved by the Ministry of Health. They are an advance on the old code, and will tend to effect an improvement in the houses registered in the future. At the latter part of the year complaints were received from several of the keepers of common lodging houses that as the Public Assistance Committee had refused to assist inmates of common lodging houses these persons were leaving them and taking up quarters in other houses, which were to all intents and purposes, unregistered common lodging houses. A list of such houses was obtained, and these are being dealt with.

The following summary shows in detail the accommodation as at the end of the year :—

Description of Lodgers.	No. of			Accommodation.			
	Houses.	Single Beds	Double Beds	Married Couples	Single Women	Single Men	Total.
Married couples and single women ...	2	64	10	10	64	..	84
Women only	1	18	..	..	18	..	18
Men only	33	1077	..	..	..	1077	1077
TOTAL.....	36	1159	10	10 20 persons	82	1077	1179

The total number of lodgers for which the houses are registered is 1,179, as compared with 1,284 at the end of 1929, showing a decrease of 105 in the total accommodation, due to the removal of two houses, the addition of one, and a re-arrangement of beds in six of the existing houses.

The average number of lodgers per night was 667, the highest number being 695, and the lowest 617. This decrease on last year's numbers is probably due to there being no large public works now in progress, and also to the action of the Public Assistance Committee before mentioned.

REGISTERED COMMON LODGING HOUSES.

SUMMARY OF WORK DONE AND VISITS MADE DURING THE YEAR 1930.

Number of Houses on the register at the end of the year.....	36
Applications for registration (Newcastle Corporation Act, 1911, Sec. 63) ; all granted.....	38
Houses added to the Register.....	1
Houses ceased to be occupied as common lodging houses	2
Inspections made in the day-time	4,788
Inspections made in the night-time	152
Notices served { <i>re</i> washing of bed clothes, 146 }	219
{ <i>re</i> limewashing of houses, 73 }	
Contraventions of Bye-laws, etc. :—	
Structural defects in houses	16
Defective water-closets	14
Defective roofs and defective or choked spouting.....	9
Choked W.C.'s and drains	31
Dust bins defective or insufficient	8
Lack of efficient ventilation (broken sash-cords, etc.)	2
Sink wash-pipes choked and/or defective	3
Accumulation of refuse	1
Defective yard pavement	1
No water supply	1
Bedding defective	2
Unclassified minor nuisances	5
Deaths reported	2
Cases of infectious disease reported (measles 1, tuberculosis 13, erysipelas 3)	17

Factories and Workshops.

The inspection of these was well maintained during the year, 9,372 visits having been made. These included visits to workshops, "domestic" workshops, workplaces, laundries and bakehouses, and also to factories on receipt of complaint from H.M. Inspector. Generally speaking, their condition as regards sanitary accommodation, ventilation, cleanliness, water supply, and other matters of a hygienic nature is satisfactory.

During the year 56 lists of "outworkers" were received, 23 employers having sent in their lists twice, as required by the Factory and Workshop Act, 1901, and 10 employers only once. Included in the lists were 5 names and addresses of outworkers residing in other towns, and these, in accordance with the requirements of the Act, were forwarded to the Local Authority of the district concerned. In only 3 cases was any contravention of the Act found in the 53 outworkers' premises inspected.

36 notices as to insanitary conditions in factories and workshops were received from H.M. Inspector of Factories, 21 of which related to factories (which are not visited by the Inspectors of the Health Department except on receipt of a complaint from H.M. Inspector), and 15 to workshops. Many of the latter, however, had been found and dealt with by the District Inspectors before the complaint was received. The others were dealt with and the necessary works carried out without having to resort to legal proceedings.

ADMINISTRATION OF THE FACTORY AND WORKSHOP ACT, 1901, IN
CONNECTION WITH FACTORIES, WORKSHOPS AND WORKPLACES,
DURING THE YEAR 1930.

Home Office Tables.

1.—INSPECTION OF FACTORIES, WORKSHOPS AND WORKPLACES.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS.

PREMISES. (1)	NUMBER OF		
	Inspection. (2)	Written Notices. (3)	Occupiers Prosecuted (4)
Factories	311	246	None
(Including Factory Laundries.)			
Workshops.....	7,495		
(Including Workshop Laundries.)			
Workplaces	1,566		
(Other than Outworkers' premises.)			
Total.....	9,372	246	..

2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS AND WORKPLACES.

PARTICULARS. (1)	NUMBER OF DEFECTS.			Number of Offences in respect to which Prosecutions were instituted. (5)
	Found. (2)	Re-medied. (3)	Referred to H.M. Inspector. (4)	
* <i>Nuisances under the Public Health Acts:—</i>				
Want of cleanliness.....	217	217	..	..
Want of ventilation	8	8	..	..
Overcrowding .....	..	..	..	..
Want of drainage of floors.....	..	..	..	..
Other nuisances	58	57	..	..
† Sanitary accommodation { insufficient	36	36	..	..
{ unsuitable or defective	93	93	..	..
{ not separate for sexes... ..	10	10	..	..
<i>Offences under the Factory and Workshop Acts—</i>				
Illegal occupation of underground bake-house (s. 101) .....	..	..	..	..
Other offences .....	..	..	5	..
(Excluding offences relating to out-work and offences under the Sections mentioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order, 1921.)				
Total	422	421	5	..

* Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

† Sec. 22 of the Public Health Acts Amendment Act, 1890, is in force. The standard fixed by the Sanitary Accommodation Order (No. 89) of 4th February, 1903, is followed as a model.

OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.

NATURE OF WORK. (1)	Instances. (2)	Notices served. (3)	Prosecu- tions. (4)
As per Home Office List.....	None	None	None

TRADES.

Particulars as to the number and nature of the various trades carried on in the workshops of the City:

TRADES.	Work-shops.	Domestic Work-shops.	Work-places.
Athletic Outfitters, etc.	12	..	..
Bacon Curing, Pickles, etc.	53	1	2
Bags, Waterproofs, etc. (making and repairing)	19	2	2
*Bakehouses	268	..	..
Blacksmiths, Plumbers, etc.	120	..	2
Bouquets and Wreaths (making, etc.).....	13	..	..
Boots, etc. (making and repairing)	130	24	..
Dressmaking, Underclothing, etc.	265	57	..
Drysalters, Cleaning & Packing Fruit, Tea, etc.	33	1	97
Furniture Making, Joiners, etc.....	216	7	..
Harness, etc. (making and repairing)	25	..	..
Jewellery, Watches, etc. (making and repairing)	75	2	..
Laundries.....	21	..	..
Machines and Tools (making and repairing)..	146	3	3
Painters, Engravers, Photographers, etc.....	89	3	11
Restaurant Kitchens, etc. ....	..	..	123
Tailoring, Shirts, etc.	268	28	..
Miscellaneous	106	..	117
Totals	1,859	128	357

* Includes 46 " Factory " and 81 " Domestic " Bakehouses.

Inspection of Council and Other Schools.

During the year 129 inspections of schools were made and only four minor defects found. When brought to the notice of those responsible, these were duly remedied.

Rag Flock Acts.

There are no manufacturers of Rag Flock or persons solely dealing in that commodity, the principal users being upholsterers and bedding makers, who number 38. Six samples were taken, all of which were certified to conform to the standard of purity required by the Regulations. 75 visits were also made under the Factory and Workshops Act, 1901.

Exhumations.

During the year 5 exhumations were carried out under the supervision of the Health Department, all being authorised by Home Office licence. In each instance re-interment took place in the same cemetery. The operations were carried out in the early morning, and were conducted in a sanitary and reverent manner.

Fertilisers and Feeding Stuffs Act, 1926.

In pursuance of this Act, 62 visits have been made to factories, warehouses and retail shops where fertilisers or feeding stuffs are prepared or stored for sale, for the purpose of seeing that the requirements were carried out as to the marking of packages, inspection of registers, etc.

13 samples of fertilisers and 11 of feeding stuffs were obtained for analysis, and offences were disclosed in 5 cases. 4, referring to fertilisers, were met by letters of caution. The other was in respect of a sample of feeding stuff obtained informally from a farmer and, on a subsequent formal sample from the wholesalers proving to be genuine, no further action was taken.

Merchandise Marks Act, 1926.

In the administration of the above, 202 inspections and personal visits to shopkeepers have been made with a view to enforcing the provisions as to the marking of imported goods with the "indication of origin," as required by the Act. 81 cautions were given (52 verbally and 29 by letter). In the latter part of the year, a short notice to traders (setting out the principal provisions of the Act) was prepared, and a number of these were circulated, involving 234 visits to shopkeepers, stallholders, barrow men, etc.

**Agricultural Produce (Grading and Marking)
Act, 1928.**

78 inspections of markets, shops and stores were made as to the grading and marking of eggs. No contravention of the Regulations was found.

Changes in the Staff.

In June, Inspector Wood resigned, on being appointed Assistant Sanitary Inspector at Southport, and was succeeded by William Bell, who, after three months service, left to take up a similar appointment at Blyth. The vacancy thus caused was filled by the appointment of W. A. Pilson.

In conclusion, I would place on record the loyal co-operation of the members of the staff, who have given of their best.

I am, Sir,

Your obedient servant,

C. RAIMES,

Chief Sanitary Inspector,

Inspector of Common Lodging Houses, etc.

Health Department,

Town Hall,

19th June, 1931.